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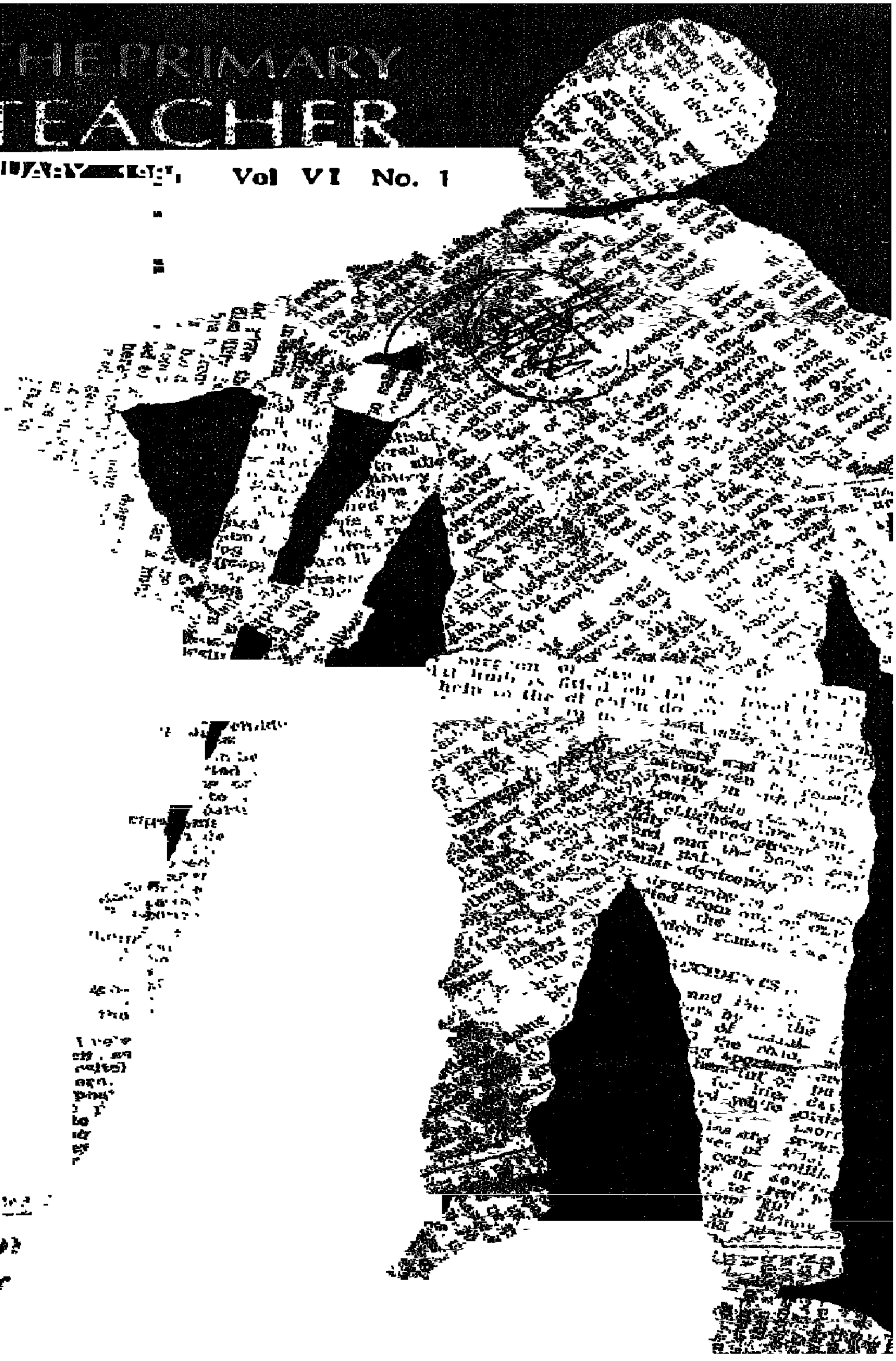

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The journal intends to give to the practising teachers and concerned administrators authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc., offered at various centres in India from time to time. It also provides a forum for the discussion of contemporary issues in the field of education

The major features of *The Primary Teacher* are :

1. The educational policies concerning primary education
2. Questions and answers
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The Rights of Disabled Persons

A declaration of the rights of disabled persons was proclaimed by the United Nations General Assembly on 9 December 1975 (resolution 3447 (XXX)). The rights, in summarized form, are as follows

1. A "disabled person" is any person unable to ensure by himself or herself a normal life, as a result of a deficiency in his or her physical or mental capabilities.

2. Disabled persons shall enjoy all the rights set forth in this Declaration without discrimination on the basis of race, colour, sex, language, religion, political or other opinions, state of wealth, birth or any other situation applying to the disabled person, or to the person's family.

3. Disabled persons have the inherent right to respect for their human dignity. Disabled persons have the same fundamental rights as their fellow-citizens of the same age, first and foremost the right to enjoy a decent life, as normal and full as possible.

4. Disabled persons have the same civil and political rights as other human beings

5. Disabled persons are entitled to measures designed to enable them to become as self-reliant as possible

6. Disabled persons have the right to medical, psychological and functional treatment to education, vocational training and rehabilitation, and to other services which will enable them to develop their capabilities to the maximum and hasten their social integration.

7. Disabled pesons have the right to economic and social security and, according to their capabilities, to engage in a useful, productive and remunerative occupation and to join trade unions.

8. Disabled persons are entitled to have their special needs taken into consideration at all stages of economic and social planning

9. Disabled persons have the right to live with their families or with foster parents and to participate in all social, creative or recreational activities. If the stay of a disabled person in a specialized establishment is indispensable, the living conditions therein shall be as close as possible to those of the normal life of a person of his or her age.

10. Disabled persons shall be protected against all exploitation, all regulations and all treatment of a discriminatory, abusive or degrading nature.

11. Disabled persons shall be able to avail themselves of qualified legal aid when such aid proves indispensable for the protection of their person and property.

12. Organizations of disabled persons may be usefully consulted in all matters regarding the rights of disabled persons.

13. Disabled persons, their families and communities shall be fully informed, by all appropriate means, of the rights contained in this Declaration.

Education for the Handicapped

ALL CHILDREN deserve attention and in majority of cases receive it too. However, in the case of handicapped children this is even more true. These children are victims of misunderstanding besides their inborn handicaps. A few join the ranks of the handicapped soon after birth. Whatever be the reasons of their handicap they demand a special kind of attention generally denied to the normal, average child. These children develop hypersensitivity too. They seldom have the mechanisms developed to safeguard their interests and well-being. Indeed they are, in most cases, victims of social neglect which they find it hard to bear. In other words, the problems of the handicapped are sociologically and psychologically very different from their otherwise better built peers. To be precise they need security, well-being and faith of their parents in them.

Our concern for these children springs from several reasons. We want these children to acquire a sense of well-being and social acceptability. We would like them to become self-dependent at least physically, if not economically. We want that these children overcome their psychological barriers. Therefore, there is all the more reason to get over the problem of meeting the special requirements of these children through traditional methods of teaching in the ill-equipped classrooms. Involved in this is the problem of avoiding a sense of alienation these children so naturally acquire. Therefore, one doubts whether it would be a good idea to put these handicapped in a separate institution. A few like the 'delicate' or physically disabled may need special attention but not a special curriculum. Those who do need a distinct curriculum could be for social events allowed to mix with others. It would be a great credit to teachers' training colleges if they offered special courses for teaching the handicapped children. Aware as we are that educational facilities do not exist for all normal children, what to say of those who fail to qualify the term 'normal', we would be falling short of civilized norms if we offered nothing to these children. Therefore, efforts are needed to make our methods of teaching these children equal to the requirements. We are sure that even a developing economy like ours can accommodate them.

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ALL PARENTS dream for better lives for their children Many parents desire their children to be able to achieve more than they themselves were able to accomplish. Some parents simply hope their children will survive to reach adulthood in order to make their way in the world. But the gap between desire and ability to implement it in helping the child is very

large. Some parents lack any notion that they are or should be teachers of their children while some lack the ability to teach them They do not understand what behaviours on their part help a child to learn and what things they do which prevent or inhibit learning. They may lack knowledge of what kind of conditions and experiences seem to open the world for the development of the child and belief that after all each person is a victim of chance, fate and circumstances and that there is little an individual can do to affect what might happen to the child.

A crowded home, low income and lack of formal education may all inhibit the ability of the parents and may actually lower the level of aspirations for their children Parents who seem endowed with many material possessions may also fail to provide specific opportunities that might enable their young children to develop their aspirations The warm adult-child interaction may be absent in the busy professional home.

Therefore, working with parents can be beneficial for the child's welfare. Parents can influence a child's ability to adjust into society. A severely handicapped child cannot achieve the same excellence of preformance as a mildly handicapped. A mildly handicapped child cannot achieve the same performance like a normal child. However, an efficient well motivated child may excel the performance of a sloppy, anxious, poorly motivated normal child. This indicates the need for accepting and understanding the handicap of a child. Hence, it is important to develop sensitivity in parents about their influence on the children and how best they can help to encourage and develop the full potential in the children

According to Andrews (1977) parents have positive attitude towards their handicapped children They want to understand their need which can help them to develop their children's potentialities He further states that any attempt to modify the behaviour of the handicapped child should be directed at the family as far as possible. Huber (1978) emphasized that parents, if given necessary information and training, could play an important role to help their children Bevington (1978) says that various schemes have been designed to involve parents actively in the education of their children and to use the parents as important agents of change in behaviour. All this shows that the parents need guidance to train their child at home. Parikh (1977) emhasized that any comprehensive programme for the developmentally handicapped should include education for the parents as an integral part of the total programme. Adam (1975), Goorham (1975), Kaur (1977) and Rosedale and Feldman (1975) also indicated similar views.

The literature and studies available indicate that there is a need for providing the parents with understanding of the nature of their child's problems and treatment method This will help parents in understanding their difficulty and motivating them to help their children

The literature and studies available indicate that there is a need for providing the parents with understanding of the nature of their child's problems and treatment method. This will help parents in understanding their difficulty and motivating them to help their children.

Parent education programmes to meet the guidance needs is very essential It can facilitate parents' effort (*i*) to help their children and (*ii*) improve their skills in dealing with their child This, in turn, can help their children develop a healthy self-concept to foster the possible mental growth. The studies to plan and evaluate parents education programme have been done for the parents of normal children. But there are very few such studies available for the parents of developmentally handicapped children.

Hence, the present study was undertaken to develop, conduct and evaluate an education programme for the parents of developmentally handicapped children.

Objectives

The objectives of the study were as follows :

1 To Develop and conduct a need-oriented programme for the parents of developmentally handicapped children to (*a*) help parents accept the handicap of the child and prepare them to face the reality, (*b*) develop skills in parents to guide the child for the improvement of his abilities, (*c*) develop coping skills in parents to guide child at home.
2. To evaluate the programme offered to the parents through studying (*a*) the gain in understanding of the parents, and (*b*) the change in parents' behaviour while training child at home.

Sample

The sample for the present study consisted of 40 parents, who had one developmentally handicapped child between the age group 4-17, to assess the common needs. Out of these 40 parents only 14 parents, i.e. seven couples, comprised the sample for the purpose of conducting and evaluating the programme developed for them. The age of these parents ranged from 26-55 years, belonging to an income group Rs. 1000-15000 per annum with an educational background ranging from Class II to graduation with diploma.

[illegible]

The data were collected in two phases. During Phase I data regarding assessment of parents' needs for guidance and in Phase II data pertaining to execution and evaluation of the programme was collected. Parents' common needs were assessed through a tool named as 'parents' need assessment sentence completion form' to develop a need-based parents education programme.

Assessment of [illegible]

The responses of parents were categorized under five categories of needs : (*i*) parents' anxiety, (*ii*) child's abilities and disabilities, (*iii*) parents' expectations from their developmentally handicapped child, (*iv*) parents' expectation from the community, and (*v*) areas in which parents need guidance. Frequencies were tabulated and percentages were calculated. The needs expressed by 25 per cent or more parents were considered as common needs which were as follows .

1. Parents need guidance to increase their strength in terms of controlling their anger, increasing their confidence, and developing coping skills to deal with the child
2. Parents expressed need for the outlet of anxiety to develop awareness regarding its causes and effects on the child and the self
3. They need help in understanding their daily problems and handling them effectively.
4. They expressed desire for developing good health habits in the child and making him independent in routine tasks.
5. They need understanding regarding nature of handicap, its causes, medical treatment, training and prognosis
6. Parents need guidance to perceive special needs of these children by understanding their behaviour
7. Parents expressed desire to know what and how much learning can be expected from their child.
8. They want to understand their role in helping the community to understand and accept their child.
9. They showed curiosity to know diagnostic evaluation services, training facilities, rehabilitation centres and employment opportunties for these children in the city of Baroda and other parts of the country.

Based on the needs assessed above a framework for a parent education programme was prepared which included objectives, content and expected behavioural change in the parents.

For the purpose of implementing the programme effectively, lesson modules were prepared. The programme was carried out in Gujarati by an experienced teacher in the field of special education. The programme was conducted for four days in a week for a total period of eight weeks Mothers received the programme for 3-4 days in a week and fathers once in a week The programme was the same for both the parents. The programme was evaluated during the process of execution as well as after the completion of the programme. Three tools, namely, (*a*) daily evaluation reports, (*b*) observation schedule, and (*c*) interview guide were used to evaluate the programme Daily evaluation reports consisted of the group reactions regarding the day's programme. Guidelines were prepared for observation of mothers' involvement in the play centre and observing parent-child interaction at home. An interview guide was prepared to find out the effectiveness of the programme.

The results revealed that after receiving the programme there was an increase in majority of the parents' understanding regarding themselves and their child. It helped them to accept the handicap of the child, improve skills to help their child and to develop coping skills in them. It also helped them to modify their behaviours in a manner which helped their child and themselves The results revealed that mothers gained more from parents education programme than fathers. The reason for this might be that the mothers had higher motivation to

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learn than fathers as they have to deal with the child for most of the time or it might be that they were given more intensive programme than fathers. The fathers found the programme useful in terms of acceptance of handicap, understanding his limitations and giving play and activity experiences to enhance their learning

Parents increased understanding regarding the importance of play and play material They also became aware about their role to help their child to take part in play activities. They were also able to know about the therapeutic value of play and channellized the pent up energy of their child by providing suitable material Parents developed insight in perceiving the need of their child and providing play material and activities according to his interests.

The data indicated that parents showed increased awareness regarding different aspects of training of developmentally handicapped children. However, it was observed that parents need help in increasing their understanding about improving communicative skills in the child, the difficulties these children faced while learning, understanding emotional problems and handling them effectively

Parents expressed that they require help in many other situations like when the child stammers, shows stubborn behaviour, speaks too much, quarrels with neighbourhood children, etc This indicates that this education programme helped parents develop insight in the above-mentioned aspects They recognized that beating the child did not help them to overcome the situation. Parents still need guidance to develop coping skills in them to manage the child at home. The parents expressed their difficulty to develop healthy habits (i. e. cleanliness, proper use of play material, keeping the place clean, etc.) in these children. The reason for this could be lack of gudiance received through the programme. They need help in receiving guidance to develop healthy habits in children.

It shows that further programmes for these parents should be developed. Also while developing programmes one should be able to perceive their level regarding understanding ability of child, type of handicap and their felt need to make it more meaningful. It could also be that in the present programme the programme organizer with her vast experience was able to deal with parents and discuss their daily problems freely.

Conclusion

The information obtained through group reports and interviews with parents indicated that the programme had helped parents to recognize the difficulty faced by the child and to deal in a manner which can help both the child and parents. □

The Disabled Children of our Country

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Has anybody ever walked in Indian street, whether in rural or urban setting, without seeing a physically or mentally impaired child? Who is this child? Why is the misery? Is there no remedy for his improvement? A large number of children are disabled from birth only, many of them have met with an accident or suffered from a disease that has concluded in this unfortunate phenomenon This article emphasizes the necessity for seeking the remedial measures, government's cooperation and social cohesion for the welfare of this unlucky lot

ACCORDING to a United Nations study (1976) about 15 out of every 100 children suffer from some kind of handicap or the other. Statistics show that there are at least 2 million mentally retarded, eight lakh blind, five lakh orthopaedically handicapped and two lakh deaf children—not counting the milder forms of these conditions. About 12-14 thousand children go blind every year due to vitamin A deficiency and about 10 to 15 per cent children of our country suffer from night-blindness. Such magnitudes of varied disability throw sufficient hint on the dire need of the cooperation of individual, family, society and government to interfere to improve the situation

Society and the Disabled

In case of congenitally disabled child, he is ignorant of his abnormalities in his infancy. But as he grows and

Courtesy. Unicef Photo—T S SATYAN

develops senses, he begins to realize his shortcomings. He comes to face the society and the problem of adjustment crops up. Does the society accept him ? Is he a social burden ? He grows with more and more consciousness of his abnormalities. Sometimes he tries to go closer to the people around him who might in turn keep him away. He is made to realize the widening gap between himself and society. His friends tease him, for some he is a laughing stock, while for others he is an irritating source. With this he develops a peculiar psychology and develops an inferiority complex. He lacks company and gradually withdraws himself from outside activities. Consequently, he tends to loose his potentials, whatever he has got, and his intellect gets blurred under the smog of desperation. Disgusted with the social atmosphere he seeks pleasure in his family only

The Role of Family [illegible]

The family is supposed to be an effective instrument of change in the condition of the disabled children. Especially in our society it is always the core environment for human development. If the family boosts his morale he might try to overcome his limitations and unfold whatever potentials he has got. But there is always a gap in between 'what should be done' and 'what is being done'. A compassionate, disheartened mother nurtures her disabled child but she is not the whole family Often other members of the family are found feeling disgusted with the abnormal behaviour of the child. In many other cases due to ignorance and superstition he is looked down upon. He is even considered as a burden on the family.

There are 800 voluntary organizations and state institutions offering educational and training facilities to about three lakh handicapped children. Existing services cater to only 4 per cent of the physically handicapped, 2 per cent of the blind, 2 per cent of the deaf and barely 0.2 per cent of the known mentally retarded child population. Since the on-going projects to rehabilitate the disabled children are not adequate in a country of about 270 million children, the government is trying to improve their condition by various schemes. Financial assistance to voluntaty agencies, scholarships to children studying in schools, stipends to in-plant trainers, conveyance allowance, etc. are likely to enlighten the hope of this unfortunate class. A 96-house complex built by the Delhi Development Authority at Tahirpur, Delhi, for the treatment and rehabilitation of the lepers begging and roaming in the street is an encouraging step towards this direction.

Another notable step is that recently Prince Charles of the U.K has extended his help to the handicapped in India. Two of the mini buses donated by him (earmarked for Bombay) would be used to transport disabled children to a training and physiotherapy centre.

Social and Psychological Aspects

In view of the above discussion a national policy on a wider scale is a must. But the problem of handicapped children has got other aspects also, viz. social and psychological. The realization has to be dawned on the social conscience that a disabled child or a person is the same simple man with emotion and passion which throb and pulsate through any human being. He has also got his own feeling, need and hope. If he is paid the needed attention he can use his potentials for a better cause. We must try to dispel his uneasy feeling of being unwelcome and give him a new hope for a glorious future. Our children should be taught to behave nicely with them. They should not tease or make fun of an abnormal child.

There are many other ways and if they are followed properly one can reduce the number of handicapped.

Courtesy : Unicef Photo—T.S Nagrajan

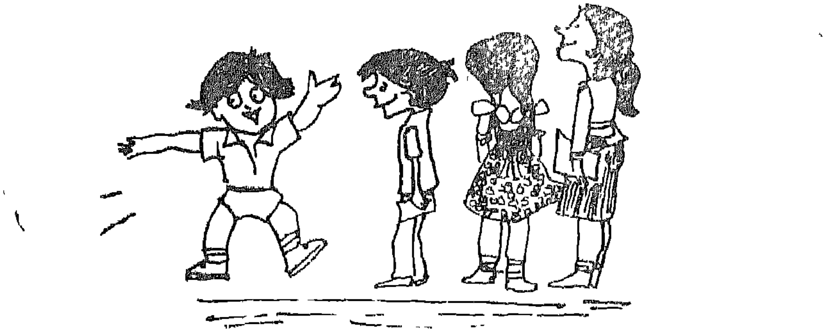
Types of disability among children

The following types of disabling conditions may be found among children everywhere

- children considered to be severely mentally impaired deficient or retarded,
- children considered to be slow learners,
- children considered to have speech or language defects
- children who are hearing impaired
- children who are blind,
- children who are partially sighted
- children who are motor handicapped,
- children with specific types of learning disabilities
- children who have behavioural problems, maladjusted and psychotic children, and
- children with various combinations of such conditions

Regular introduction of vitamin A does prevent blindness in the children; immunization of the child population against polio and reduction of incidence of cerebral palsy through proper care during pregnancy are few preventive ways.

Prevailing social attitude towards the mental and pysical handicaps is another problem. We must combat numerous traditional superstitions and beliefs to bring a social change. Only material security is not all, emotional upliftment is also a dire need for them. ☐



Mental and Physical Development of A Child through Children's Literature

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ONE of the several unique features of human evolution is its ability to speak. And it is perhaps the most powerful of the instincts that have helped man in arrogating itself as the cynosure of the world of activities in the universe today. Speech in its turn is only the expression of one's feelings, Strong or fine, and reactions, subtle or violent, about the events around him. Expression of one's feelings and reactions in a definite and acceptably pleasant way is literature, and so literature is a product of human instinct to speak and to speak about his feelings and reactions. But conventionally we do not consider any speech an article of literature.

When speeches are spoken on a definite theme over one or several plots of life, in a consistent form and all these are beautifully recorded, we call it a piece of literature. When the producer of such pieces of literature with a deliberate design, desires it for the use of the children we call it children's literature. Whether children's literature should mean literature produced by the children themselves is a different matter and is of no apparent significance in the convention-bound world of ours. But, nonetheless, one should agree to the views that children's literature should be as much the literature meant for the children as the literature wrought out by the children themselves.

Children's literature is a disciplined, consistent expression of a human head and heart, with a specific design in a beautiful form, e.g. stories, poetry, essays, dramas, one-act-plays, sketches, parodies and comics, drawing and cartoons, puppetry, etc. Thus, All the products of human erudition that amuse and keep a child productively engaged can be called children's literature. Any human expression has two objectives, one certainly is to publicize the concern of the one who expresses over the cause of what is expressed, and the second is his desire to impress upon all others who might come to notice his expressions. Literature is no exception, therefore, to these primary objectives, and thus we are here more concerned about the second objective, that is, how literature and more especially children's literature can impress upon and influence a child's life both on the mental and physical planes.

[illegible]

While considering the impact of children's literature upon the life of a child, obviously the good and the bad in it are considered, keeping an eye on the shaping of the personality of the child in future. Every human idea, including the children's literature has a tacit aim of building up a healhier and wiser future generation. From this angle the whole problem of development of a child should be considered, and here I should straight let the cat out of the bag and say that we have systematically neglected our children, we have systematically ignored the psychology and the psychological needs of a child. This we have done certainly not out of any apathy for the child, but out of our ignorance, lack of critical analysis and out of our over-anxiety for a better future of our own design for the concerned child. This has shot off a peculiar complex, we the adults surfer from, and in our craze for the fulfilment of our clandestine and unfulfilled desires we project it upon our children, and in the name of their (the children's) future we desire and

design them to attain goals which we cherished most but could not attain. This is a sinister war upon the children in our society. Unless people engaged in producing literature for our children are aware of this basic flaw, one can fairly be sure of a bleak future for our children in the world.

One must remember the colossal adumbration of every human trait and walk by the great colossus called science and its twin the technology. These twins, begetting everyday about half a dozen of new knowledge, new discoveries to serve the mundane interests of man, one can rightly call our age the age of science and technology. The pace with which the modern science strides, it may not be any more a wishful thinking to foster a hope when even mummies will rise into life. Not merely diseases could successfully be prevented, problems of old age, food and space could also be satisfied to the heart's content of man the Braggadocio. It will be a common place experience to discard old and worn-out human parts like a heart, a limb or even a brain on any wayside garage of human spare parts and replace them with new artificial parts and still at the end have the same old natural man. Problems of food can also be solved by artificially preparing foods from all wastes. Even human species with all desired characters can be given birth to in a laboratory. When science promises so much of thrill and challenge for the man tomorrow, we, the adults, who really care so much for our children, should aim at providing a congenial atmosphere for the children so that they will not be dragging their legs at the turn of the century. We must remember that the children of today are going to live in a completely different age and with dfferent conditions and values of life.

[illegible]

A child instinctively is curious to know new things, is receptive to new ideas and given these, it becomes really innovative in its attitude. With these three gifts, and some care, every child is sure to come out in life successful, and face the new world as a real brave man. Every child like every adult wants a little freedom, uninhibited attention, affection and recognition. For that matter every child should be treated as a little adult, as a sovereign. Adults have no right to impose their wills on the children, rather they have a duty to create and provide a healthy environment conducive to the full natural expression of the uncontaminated personality of the mini-adult.

If children's literature can reflect these ideas, it is sure to keep the mind of a child exalted with guileless ecstasy and so make him receptive and inventive. Today science has proved that even plants need remain happy to give a higher yield of crop and so playing music for the crops in the field is now being advocated. Similarly, animals like the cattle and poultry are given to music and other human ways of expressing attention and affection for a better yield. So it is also with us the human beings. Human species with their animal instincts for a territory (home), a desire to live a better life through a sovereign-feeling about attention, affection, recognition and security of their survival, are perhaps rational enough to drive this idea to their hearts, so far the children are concerned. With exalted mental make-up, with ecstatic resolution of the mind, the physical growth of a child is bound to follow the rails of a healthy, wise development.

Unless children's literature reflect these, however amusing and absorbing it may be, it will be irrelevant so far its impact upon the mental and physical development of a child destined to live in the twenty-first century is concerned Keeping this in view the literature for the children today should aim at educating the adults in these lines. To promote a creative attitude in the children they should create a free forum for the children in every village and town in the country. Children's literature should be available to them in a language best understood by them, that is, their mother tongue. Taking to an alien language is like putting on clothes tailored for another. So all necessary steps are to be taken by national bodies and government to promote children's literature in regional languages. Literature in one language should be made available to the children of another language through translation of such literature into all other regional languages in the country. Essays of this sort should form an important part of a medium for exchange of views among the people engaged in producing children's literature. Let us hope that it is not too late to give new twist to our conventional notions of creating such a literature for the children that can accelerate the process of their mental and physical development. □

Teacher : A Practical Context

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WHENEVER WE think of a teacher we think of him as a person contributing to the national esteem, an ideal person, etc We have with us a legacy from ancient days about the relationship of the teacher with his pupils and also how a teacher should develop his own personality and character. It is a matter of surprise that even after all this expectation from the teacher, his work continues to be a matter of dispute. The most important component of one's character is his commitment to work It is important everywhere, more so in the case of the teacher. No one could dispute that teacher contributes towards the national good, both directly and indirectly. It is a separate issue how much the teacher can feel committed to his work. Only such teachers who establish rapport with the children qualify to belong to the category of being successful teacher. Such teachers, both inside and outside classroom, understand and appreciate the problems of children Teaching and guidance can be effec-

tive in showing direction to the pupils and can be effective almost in all cases and at all levels but thinkers have talked about their role in primary and secondary classes. Gandhiji also thought on the same lines. According to him a teacher must spend all his time outside classroom on knowing about the interest of children and their betterment

We could mention here that despite a great wish to act in this manner teachers have not been successful in measuring up to their expectations. Perhaps the reason lies in their personal problems and the problems of their families. Everybody is aware of the problems and difficulties teachers have. A teacher has to establish coordination between the reality and the goals and also the circumstances he himself is placed in. No outsider can help in this regard. Only those teachers who feel a strong affection towards children alone can help them. Here, the term 'society' has been used in a wider sense. Obtaining good marks in the examination is not the sole purpose of teaching. It is extremely necessary to know what happens when a child leaves one class and moves on to another. Also, to what extent his personality has been developed. Perhaps, this work cannot be undertaken either by the children themselves or even the parents. Only a teacher can do this. If a teacher feels committed to his work it is essential for him to regard his work important. If he really thinks that his work will put so many people on the right path and influence so many families he would be doing the job of a successful teacher and would also progress. It is a constant process and as his influence increases he would be more and more responsible and develop his personality Such teachers will be a great asset to their institutions.

It is said about Alexander that once he declared· "Whatever I am today for this I am obliged to my parents and to my teacher I am greatly indebted". This is very important. The parents are responsible for giving birth to the child but the teachers prepare them for life and enable them to become responsible citizens For making children lead a good life teachers make a happy contribution There are no limits to this. His contribution can be immense. The teacher can acquaint the student with respect for ideals, give them knowledge of cultural traditions and mould their life-styles in the proper manner.

In the present-day world both teachers and students are lagging behind the great ideals fixed for them. There is lot of unrest at the secondary and at the university level. It is unfortunate that several students show disrespect to their teachers and humiliate them. It is a strange fact of life that where teachers are most respected such a situation should occur at all. In this context Emerson has said: "The secret of students respect is implied in good education." In my opinion whenever we think of student-teacher relationship we forget that the teacher is great but whatver Emerson has said we tend to forget it. It is the responsibility of the teacher to remember this. If it is possible to remember all this most of his problems will be ideal If a few students are misled and misguided no proper relations of teachers and students will ever be possible. Where teachers expect students to respect them we must also consider whether the teachers appreciate the problems of the students and guide them Gandhiji declared that for a student teacher is his textbook Students expect something from their teachers. Many a time they expect without knowing it. The same is implied in what Gandhiji has said and in this matter the personal opinion of the teacher carries weight. No one can possibly preach merely and expect that everyone will follow the same. It is not possible that the teachers should become ideal persons but it is certainly probable that a teacher can imbibe all the qualities which are expected to be present in a human being. Considering the present-day world this itself will be a great achievement

Whenever we think of teachers and the students it is necessary for the entire society to feel responsible towards them and consider their problems sympathetically. The educational system must reflect hope and aspirations of the society. In all aspects of social life society has to find solutions for its problems and work towards modification of the educational system accordingly. We must appreciate that if the society respects the teachers it also respects its own children. If we extend this logic a little further the same is true for the future of the country. Prof Humayun Kabir said· "If we do not pay any attention to the teacher we do not pay attention to the future of the country because both fall within the same category." Teachers can do many things if the society also collaborates with them. There is a great need today of establishing relationship between the aims and objectives and the practical demands of life. Whatever is possible at the personal level we should pay attention to this and work on the same lines considering its importance. Those teachers who act on these lines can make a great contribution to the social life. The teachers would also not like to overlook the difficulties in the present world. The teacher, the student and the society—all the three must respect each other and try to help in all manners possible. □

On Improving the Programmes of Classes I and II

D S PARIHAR

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Class I is the foundation stone of primary education. If the programme of this class is not interesting, progressive and successful, a child can never progress in life.

In the tribal area of Narainpur it was found some three years back that students were not able to learn even the simple alphabets and numbers. The educational system was unattractive and static. Teachers used to

write numbers on the black-board in the morning and the same remained on the black-board the whole year round. In Classes III and IV tables were taught. Terms were used such that it was not possible for children to understand anything The children of Classes I to V faced great difficulties They had difficulty in learning numbers up to 100. About 50 per cent of the children were not able to reach Class V Therefore, it was considered essential to make certain modifications In the place of old methods, moderns interesting and progressive methods were developed and introduced Necessary experiments were undertaken The teachers were not trained, therefore, they were taught through the modern methods and familiarized with the environment.

Hindi and Regional Languages

The regional language of the area is Gondi. The teachers of Hindi had some difficulty in learning it. The local teachers who knew Gondi were assigned Classes I to V and they used to speak in their mother tongue only Consequently, their former language Hindi did not develop. Students of Class IV and V were not able to speak even a single sentence of Hindi properly. Children had difficulty in learning Hindi alphabets Therefore, the following methods were adopted for teaching the regional language and also Hindi with certain modifications made from time to time

In their daily classroom work teachers were made to speak Hindi and the children were asked to understand and practise the same from Class I onwards Regional languages were also used When the children could understand these two, they were taught names of the different parts of body, learn *Bal Bharti* and talk mostly in Hindi Thus they could understand and appreciate Hindi language quickly

The teaching of language and mathematics is the corner stone of education, wherever it is not recognized as such, the standard of education goes down.

In the beginning in order to create interest and make them learn alphabets Gondi was used Whenever it was difficult to understand the alphabets they were specially helped. Both the languages, i.e Hindi and Gondi, were suitably coordinated to be used in teaching. As there was no material available in Gondi the chart of Hindi alphabets was used. The following methods were used for teaching Hindi:

1. Alphabets chart to recognize different articles and languages were used.
2. Pictures were used to teach alphabets.

3. Different designs were used to help in writing
4. Alphabets were used according to their design so that they could practise it
5. Pictures were removed and children were asked to recognize
6. Without words sounds were taught.
7. *Bal Bharti* was taught with the help of all these matters.

In order to teach spellings children were taught sounds and stresses. Therefore, there was no difficulty in pronouncing certain letters and words With the help of these techniques lot of practice was given in teaching. Eighty per cent of the students in Classes II and III were now able to read their textbooks.

The following are the reasons why certain changes have not taken place so far :

1. Long absence or leave by children.
2. Absence of writing material such as slates
3 Disinterest of teachers in teaching.
4. Single teacher taking more than 4 to 5 classes.

Wherever it was not possible to teach *Bal Bharti* in full, children were not able to learn the language fully. The methods have been evolved to teach alphabets and also their spellings with proper stress. It is now possible that within a month's time children can learn all these There is a lot of saving in time in this regard.

7. [illegible]

There is a basic weakness of the children in learning mathematics. Formerly, they were taught how to count and read. Still the children failed to learn. Therefore, the following methods were evolved for teaching mathematics :

1 Numbers of two digits were taught by spoken methods. Children used to read them loudly. For instance, they were taught to speak 10+1 made 11. Similarly, 20+1 made 21.
2. They were given proper training in single-digit and two-digit numbers and they were taught how two digits should be loudly spoken Similarly, they were taught numbers beyond 100 and 1000, etc

Class I is the foundation stone of primary education. If the programme of this class is not interesting, progressive and successful, a child can never progress in life

Some Suggestions

The teaching of language and mathematics is the corner stone of education. Wherever it is not recognized as such, the standard of education goes down As far as the author knows the standard in other areas continues to be low because the prescribed books are not properly taught. Even when the children know and recognize numbers they do not learn mathematics because they have no proper grounding in methods When they reach Class III they face several difficulties This is one single reason why primary education cannot be universalized. Therefore, in order to make fundamental changes new methods should be adopted Also, methods of teaching in Classes I and II should be improved. It is possible to do so if one adopted the following steps ·

1. If alphabets are taught through charts and the use of blackboard children will learn easily.
2. As soon as the children enter Class I they must be in possession of writing materials like slates and slate-pencils
3. Wherever the number of children in Classes I to V reach more than 25 there should be atleast two teachers. In the case of children who are not able to attend classes regularly, special attention should be paid to them.
4. In order to improve attendance mid-day meals should be provided regularly. □

Contemporary Educational Problems

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EDUCATION is a fundamental need of all children. The Indian Constitution laid down that all children between the age-group 9-14 should be provided with free, compulsory and universal education. Even so because of several problems it has not been possible to provide it. In my view education at the two levels—primary (6-11) and the lower middle (11-14)--could not be provided because of related incompetence This incompetence has a direct bearing on both teachers and the taught. It has been observed that children do not fulfil their obligation, viz. they do not complete the work assigned to them by teachers. This happens due largely to their constitutional inadequacy. A few children seek admission either prematurely or join late. Of these a few are immature while others due to lack of time cannot complete their work. Consequently, education suffers a loss

Lack of Facilities in Schools

The schools are also not well-provided. In certain areas there are no schools, this is more true in the eastern part of India where I have travelled widely. In others where schools do exist they lack classrooms and other teaching facilities and in certain cases even the staff. Occasionally I was not too sure about their head teachers. Certain private managements look upon their schools as their property In the appointment of teachers several irregularities take place and at times the authorities merely look on helplessly watching educational standards going down.

Need of New Teaching Methods

Ever since Hartog Committee (1928) several problems of education have been repeatedly looked into, still all the new things and ideas have not reached dedicated teachers. The first important thing is that the students are not loaded with books unnecessarily Suppose a student is not immature mentally but physically he is ill, do you think that child would be happy with the load of books he is given ? He will not be able to complete his work, therefore, he starts missing classes. In such circumstances the teachers become impatient. They start physically handling him. The results are disastrous. Good teachers adopt scientific methods.

Secondly, students generally dislike their schools. They have an innate love for music and games. If they get proper atmosphere the results can be absolutely amazing. In its absence, however, children are liable to go astray

A child, relatively speaking, is emotional and follows his seniors instinctively and tries to imitate others. He is more capable than us but he seldom gets any opportunity. Occasionally children commit absurdities in the class which with time flower into useful things Considering these abilities we can teach them how to make toys or learn to paint, etc. Music can enliven their teaching experience.

I have come across children who are otherwise all right but they are by nature withdrawn, bashful and highly sensitive. With such children teachers must be very patient and enable these children to socialize gradually. We come across children who have improved with these experiences. In this manner all their senses take exercise.

Absence of direct teaching can be extremely useful in the all-round development of children. This could be left free to grow by watching nature and its imitations. These days all schools have some programme on physical education. If the small kids are not taught these exercises formally and instead they are allowed to grow on their own with partial guidance, it would be more useful for their development

They would soon become physically and mentally mature Children suffer if they are not given any freedom to behave in the manner they want.

The school curriculum must include exercises of eyes, nose and car, etc. For instance, they could be taken in the open to watch greenery which is good for eyes Low-key good music exercises one's ears. Similar things can be organized for the growth and development of his senses.

We must accept that if due to his physical or other emotional handicaps a child is not able to do justice to his assigned work, he cannot be expected either to be ready for higher education or be able to face society with confidence Such children become problems both to society and the educational system. □

Evaluation and Environmental Studies

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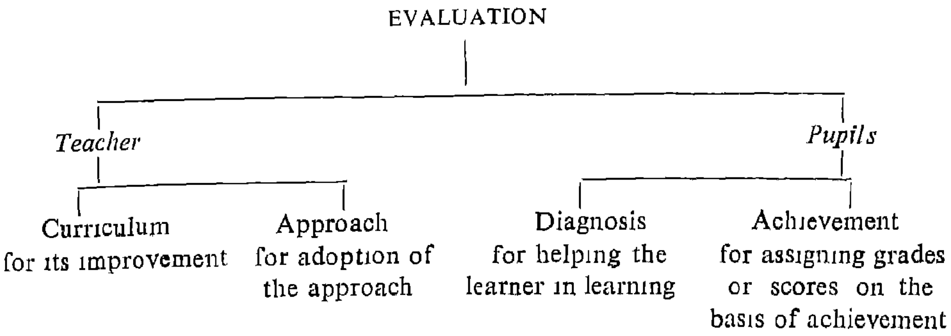
EVALUATION IS an important component of teaching. Many times it is confused with examination or achievement test, whereas the two are not the same. Evaluation is a wider term which includes evaluation of teaching and curriculum, diagnosing the difficulties experienced by the pupils, and measuring the achievements of the pupils by constructing different types of tests. Many times the success or failure of an approach depends on evaluation. More it is so with environmental study approach of teaching because it is a new approach as far as its practice is concerned. Therefore, it is not clear to most of the teachers how to incorporate the environmental bias in their teaching, tests, etc. and how to evaluate the whole programme

Various aspects of evaluation are given below :



All these aspects are important, although incorporating the environmental bias in the tests worries the teachers most. We shall discuss here all these aspects of evaluation with a view of teaching through environmental study approach

It will be noticed on a close look at these aspects of evaluation that these are not independent but are closely related to each other. This will be clarified further when we discuss these in greater detail. Continuous evaluation is necessary for making the programme a success For this the teacher has to be active throughout teaching There are many evidences available to him which can be used for the purpose of evaluation. The activities performed by the pupils in and outside the class, the home-work and class-work, the answers given by the pupils in response to the questions raised by the teacher while teaching, questions raised by the students, the interest shown by the pupils in classroom are major evidences which can be readily used by the teacher. Apart from these, the answers given by the pupils during examinations can also be scrutinized to get the feedback The important question here is : How can these evidences be utilized for the purpose of evaluation ? To see this we shall discuss each aspect separately.

[illegible]

The curriculum can be evaluated on the basis of its appropriateness, logical sequence, mental readiness of the pupils, accuracy and efficacy. The feedback for this is easily obtained from classroom teaching-learning process and observations made by the pupils. For example, the teacher may ask his pupils to observe the shape of the moon for ten days continuously and make its drawing on their note-books. If he finds that most of the students are not able to draw the exact shape of the moon, most likely the activity is not appropriate at that level Consider another example where the teacher wants to show the presence of water vapours in the air. For this he takes cold water in a shining metallic glass The appearance of water droplets on the outer surface of the glass is one evidence of this, but someone may raise the doubt that the glass may have pores Here, on the basis of this feedback, the teacher will have to introduce some activity to show that it is not the case Thus on the basis of evidences collected while teaching and the need the teacher may have to improve and modify the curriculum. Many times the questions raised by the students also serve as a window to look into the pupils' thinking. The teacher may ask the pupils to grow two similar plants, one in darkness and the other in light. After few days on observing that the plant grown in darkness is taller than the one grown in light, one pupil may remark that to grow tall plants, one should keep them in darkness. There, it will be relevant for the teacher to discuss the other effects on the plants which are growing in the darkness Similarly, when the teacher tells that birds can fly, a pupil may say that hen is not a bird. Thus, these remarks made from time to time are very useful for the teacher. Many experienced and versatile teachers do use these methods to improve the teaching though inadvertantly The answer books of the pupils also reflect the kind of teaching going on in the class. If most of the pupils commit a mistake in connection with a particular concept, perhaps the teacher has to modify his approach with respect to that concept.

2. Approach

Environmental study is the most emphasized approach to teaching science and social sciences in primary classes these days. While adopting a particular approach the teacher has to be on his guards and evaluate to find if he is doing justice with the approach. In the environmental approach the emphasis is on teaching the concepts of science and social sciences in the context of environment of the pupils. This needs the use of environmental aids for teaching and thus making the learning more meaningful, useful and relevant to the child. For this purpose, easily available no-cost/low-cost teaching aids become more useful when we look at the existing conditions of the primary schools of our country The second important aspect in this approach is to correlate the concepts of science and social sciences with the environment. In practice it means that while discussing the pollution of water pupils are made aware of habits that pollute the source of water, sources of pollution taking place in the nearby pond, river or lake; relating the freedom struggle with the monuments present nearby, the local persons who have played an important role in it and the places of relevant importance. True, in this approach the teacher plays the most important role in planning the curriculum and integrating environment with it. Also, there is no final goal to which he can aim at, it is only an improvement over the then existing curriculum. However, some questions can be mentioned here just as suggestive examples The teacher can work out similar questions and test his curriculum on this basis ·

(*i*) *Rearding Teaching Aids*

- (*a*) Is it easily available ?
- (*b*) Is it costly or cheap ?
- (*c*) Can it be shown to the pupils easily ?
- (*d*) Is it relevant to the concept concerned ?
- (*e*) Is the necessary time available to use it ?
- (*f*) Who will bear its cost ?
- (*g*) What are other alternatives ?

(*ii*) *Regarding Lesson Plan*

- *(a)* Are the concepts related to environment sufficiently ?
- *(b)* Are the concepts being diluted ?
- *(c)* Is it feasible ?
- *(d)* What are the suggestions of the fellow teachers and pupils ?

Let us take the use of glass rod or ebonite rod, silk cloth or the skin of a cat to show the presence of frictional electricity Let us also see what are the other alternatives to these One thing which can be used is a comb, rubbed with dry hair The second thing may be a balloon which can be rubbed by any terricot cloth or hand itself It is apparent that performing activity by the individual pupils will be the easiest with a balloon The added advantage of this will be that both attraction and repulsion can be shown by this The teacher can also visualize the difficulties which he may have to face when balloons are used. On these considerations he may decide the most appropriate aid to be used Similar considerations can also be done while relating the concepts with existing situations in the environment

3. Diagnosis

One of the important aspects of the evaluation which is frequently neglected is the diagnosis of the individual learners' difficulty Although in a class of 40 pupils or more it is difficult to follow each pupil's progress but even then things can be improved. Two things which can help the teacher most in this task are the notebooks of the students and silent observation of the activities performed by the pupils. Any interference or suggestions when the pupil is performing a task changes the situation and the conclusions may be biased.

Some pupils are fast in some skills and slow in others The teacher's task is also to take the corrective measures and to strengthen the strong points further.

[illegible]

To find out the achievement of the individual pupil various types of tests are prepared. The most common type of test is in the form of a set of questions whose answers are mugged up by the pupils without understanding them The recent improvement in the type of questions are so-called objective type of questions. These are mainly 'fill-in-the-blank' and 'true-false' types. At the most they require a short answer to be written, which is as good or bad as fill-in-the-blank type Usually these objective questions are so much routine that there is little evaluation performed by them. Most of the tests measure knowledge, the lowest level of cognitive development. Perhaps the reason for this is that these are the easiest to construct. A good test should also contain questions based on extrapolation of knowledge and its application. The degree of application shall, though, depend on the state of mental development of the pupils. While designing a test keeping these points in mind, it is also necessary that the tests also take into account the activities performed by the pupils. Perhaps incorporation of the environmental approach into the test seems to be difficult but a close look at it reveals that it is not so. We give here a sample of questions/tests which can be used in the classroom. The point to be noted is that these are very well related with the environmental approach

Topic : Soils and Rocks.

Concepts : Soil is of three types.
Sandy, loam and clayey soil are useful for growing different types of crops.

Test Activity 1 : Given the two types of soil, the pupil is required to recognize the clayey soil and also identify the crop (from the given examples of, say, rice, watermelon, *etc.*) which ideally grows in that soil.

Concept : Upper soil is dark in colour and more fertile

Test Activity 2 . Given two samples of soil—one of top-soil and the other of sub-soil—the pupil will identify, which is more fertile.

Concept : Soil contains humus.

Test Activity 3 : Given two samples of soil, the pupil will find out which soil has more humus

Concept : The sedimented rock has layers.

Test Activity 4 : Given many pieces of stones, the pupil will identify the sedimented rock.

Concept · There are many uses of stones.

Test Activity 5 : The pupil will find out at least five places in the school, where stone is being used

The difficulty arises when these activities are used for the test. It is not very much familiar how the marks may be distributed for the activity performed partly. To solve this problem, one has to analyse each activity into smaller steps/concepts and marks are to be assigned to each step according to the importance It is necessary to perform this exercise well in advance before assigning these activities to the pupils. This serves two purposes Firstly, the whole process remains objective and secondly, the objectives of assigning a particular activity are also well-defined. Let us do that exercise with the five activities mentioned earlier.

Test Activity 1 :

Step I (*a*) Recollection of the fact that clayey soil has smallest particles

(*b*) Identification of the clayey soil on this basis .

1+1=2 marks

Step 2 (*a*) Recollection of the property of clayey soil that it can hold maximum quantity of water.

(*b*) Identification of the crop which needs water most

1+1=2 marks

Total : 2+2= 4 marks

Test Activity 2 .

Step 1 (*a*) Recollection of the property that top-soil is dark in colour.

(*b*) Identification of top-soil on this basis :

1+1=2 marks

Step 2 : Recollection of the fact that top-soil is more fertile and thus identification of such soil :

1 mark

Total : 2+1=3 marks

Test Activity 3 .

Step 1 : Measurement of equal quantity of soil samples

Step 2 : Measurement of equal quantity of water in different containers

Step 3 : Mixing the soil in water and identifying the humus.

Step 4 · Comparing the humous in different samples and reaching to conclusion

1+1+1+1=4 marks

Test Activity 5 :

Step 1 : Identification of stone in use at five places in school.

0 5 mark for each identification

Total . 2.5 marks

In this manner each activity can be analysed While the pupil performs these activities the teacher has to be little careful to note if a pupil is not able to perform an activity and diagnose, what step he is missing. For example, in Activity 1, if the pupil dose not remember that clayey soil has the smallest particles, the pupil cannot proceed In that case the teacher may give some clue and help him to recollect this before proceeding further. While scoring pupil achievement finally, he may take this into account.

An importent reason why these types of activities are necessary to be included in the test in addition to some written qestions (may be factual, application or extrapolation of knowledge) is that the parents and pupils do not pay proper attention to performing activities till these are included in the test. Thus there shall be a danger of being neglected such activities The another reason for including such activities is purely academic. A true evaluation should take into account all that a pupil learns in the class including skills, application of knowledge, etc Thus, these activities deserve to be included because they are also a part of the curriculum

The teacher faces two important difficulties in introducing the activities in the test The first is that in many schools there is no provision for oral/activity-type test in the set pattern. These tests are partly oral and hence separate provision is to be made for this. If the school is autonomous in deciding the examination pattern, it is easy to sort out otherwise some hard work is needed in this direction

The second important difficulty is that this type of test takes a lot of time If no extra hand is available, perhaps one full day will be required for a class of 30-40 pupils. The teacher can also make a complete set of activities and assign simultaneously different activities out of the complete lot. This will save considerable amount of time also. It may be pointed out here that it is not necessary that all the pupils go through the same set of activities The chance factor may also be allowed to play its role among the activities of the same difficulty level. □

Science in Pre-Primary Schools

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THE IMPORTANCE of science during the pre-primary stage is well recognized as a part of the pre-primary school curriculum This leads to the development of structures, practices and ideas suitable for these children. They are more involved in the processes of science. Yet much has to be done to gain success in teaching science in pre-primary schools. It is observed that a child from infancy begins to discriminate and generalize about environmental data. If the children are provided with suitable stimulating science experiences, abstractions are likely to proceed more readily. Concepts seem to arise out of perceptions, out of actual experiences with the objects and situations. Most children attending pre-schools create meaningful personal representation of themselves and their environments. They recognize the various sensations received by sense organs and organize them into a framework. They think intuitively and focus their attention on specific objects within their environments.

Characteristics of the Child

An understanding of the characteristics of the child enables us to develop a science programme suitable to the children at the pre-primary level. Some of the important research findings are.

1 Everything is important to children in so far as it relates to themselves. They are affected by all kinds of environmental phenomena They try to interpert these phenomena, and their interpretations change with different stages of maturity. A good science programme should take advantage of children's curiosity to initiate effective learning in the classroom.

2. Children love to explore. The words what, why and how are common in their vocabulary

A good science programme should provide a wide variety of science experiences that involve doing learning activities.

3. Children are very energetic. They like to achieve their objectives They will often spend unusual lengths of time and effort to solve problems that are important to them Hence, science programmes should be developed in the form of problems,

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*Presented at the fifteenth annual conference of the Indian Association for Pre-school Education on 29 December 1979 provided the problems are really problems and not just questions posed in the form of problems.

4. Children like to work together in planning and carrying out their activities. Therefore, a good science programme should provide suitable group activities

[illegible]

Science programmes help interpersonal interactions The child seeks new knowledge through experimentation. Creative abilities are often found in pre-school children. The general objectives of pre-school education are : *(i)* socio-emotional development, *(ii)* perceptual motor development, *(iii)* cognitive development, and *(iv)* language development The objectives of science education may be formulated as follows :

1. To build the child's knowledge about the properties of all objects in his environment.
2. To provide opportunities to explore the properties of unfamiliar things.
3. To develop the ability to group objects according to their qualitative and quantitative aspects.
4 To compare and arrange things according to a given dimension.
5 To foster curiosity
6 To develop in children creative abilities.
7. To develop in children interactions with other children

In order to attain the above objectives suitable programmes need to be developed. The programmes are developed based on the following hypotheses

1 The concepts in science can be developed when a child is encouraged to pursue science experiences leading to observation, experimentation, and drawing conclusions
2 Pre-school programmes based on significant first-hand science experiences have significant impact on the growth of children
3 Development of concepts about science help children to gain greater mastery of themselves and their environment

[illegible]

An understanding of how children develop intellectually, and also how children learn is essential The type of concept that develops depend on the level of abstraction and on the quality of the sequences of action in mind termed schemata or schemes According to Piaget children develop intellectually in a sequence of four major stages by the age from infancy to post-adolescence . *(i)* Sensori-motor stage (0-2 years), *(ii)* Pre-operational stage (2-7 years), *(iii)* Concrete operational stage (7-11 years), and (*iv*) Formal operational stage (11-15 years). During the first stage the child uses his senses and begins to develop a practical basic knowledge that forms the foundation for learning the next stage The child builds up a picture of the world as consisting of a number of objects *The objects continue to exist even when they disappear from his sight.* He slowly builds up a vocabulary relating to the substances namely, more, less and same. During the pre-operational stage the child makes judgements in terms of how things look to him. He depends upon trial and error to make corrections. *He can observe and describe variables, concentrating one variable at a time.* He cannot coordinate variables. He can make simple classification according to one or two properties but not multiple classification. He can arrange objects in simple series but not long series To the child space is restricted to his neighbourhood and time is restricted to hours, days and seasons. *He has not yet developed the concept of conservation* It means he does not understand reversibility. At concrete operational stage the child develops the concept of reversibility and the child can now perform logical operations, coordinate two or more variables, understand multiple relationships and make multiple classifications. At the formal operational stage the child's thinking shifts from the concrete to the more formal and abstract.

One of the objectives of science is to help children learn concepts and conceptual schemes that will help them to understand and interpret their environment. It helps children develop concepts to understand · *(i)* process of evolution of living organism, *(ii)* changes that occur over a long period among living and non-living things, *(iii)* relationship between living and non-living things, *(iv)* interdependence among living things, and *(v)* water, weather and climate, air, plants, animals and human body, change in matter, heat, fire and fuels, light, magnetism and electricity.

Learning the key operations is one of the vital objectives of science. The child gains an insight and practises the different methods to solve problems and acquires experience in creative thinking. The steps in the process of development are : (*i*) The child gains new experiences about weather, seasons,light, heat, plants and animals; (*ii*) The child observes the phenomena carefully; (*iii*) child involves himself in activities and share experiences; (*iv*) he acquires new knowledge from the experience; (*v*) he expresses his ideas and experiences in words; and then (*vi*) through construction, modelling, etc.

Socialization Process

Pre-school represents the first stage of a school system. So it is concerned with the socialization of children to prepare them for the next school stage. The play-group contributes more to help particular needs of children. To develop the social skills, considerable emphasis is placed on good social relationships within the groups and a sense of individual independence is to be encouraged. The attitudes and feelings of young children during their first introduction to the school system are important and every effort should be made to invite them to participate in the joy of observing, experimenting and discovering. The pre-school should be an exciting place where children meet, discover and learn in comfortable safe surroundings.

Role of the Teacher

The objectives of education in science are primarily associated with the development of creative and cognitive abilities. To attain these objectives the role of the teacher becomes complex. The roles of the teacher in pre-primary schools to develop a good science programme are :

1. To acquire necessary information about simple problems which may arise in science teaching.
2. Awareness of the breadth of opportunities to utilize new concepts.
3. Awareness of how to relate scientific concepts through continuous meaningful experiences.
4. To arrange an environment that excites the child's curiosity, Promotes systematic observation leading to discovery, and encourage discussion.
5. To give careful thought to the component parts of the environment.
6. To introduce fresh components and remove familiar or unacceptable ones.
7. To develop concepts that lead to basic understanding about science.
8. Use of well designed materials in providing activities.
9. To understand the behaviour pattern of children.
10. To channel the attention of individuals who are not following acceptable social patterns of behaviour.
11. To help children to develop intellectually at their own individual pace through exploration, investigation, assimilation and reflection.

A Few Issues

An analysis of the role behaviours of teachers in developing and implementing science programmes at the pre-primary level raises certain issues ·

1. To treat each experience as a separate unit and to provide suitable materials to provide appropriate experiences need careful analysis.
2. To prepare suitable instructional materials in science teaching for use by teachers is another major issue which needs careful attention.
3. To provide well-qualified science educators for training teachers to work with young children is another issue.
4. To coordinate the science activities with other activities in the school is another factor to be taken into consideration in evolving a science programme.
5. Management of activities and children within groups remains a problem.

An effective science programme in pre-primary schools plays an important role in imparting knowledge to the child about his environment, developing an insight into the structure of science, offering a wide variety of learning experiences and providing varied activities to satisfy the individual differences. □

[illegible]
[illegible]

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Children love to play and put themselves into the game of their interest. While satisfying their natural instinct of playing they do not feel bored or burdened Even they forget their food time while playing. Education imparted in such an informal atmosphere will have a permanent effect. So, some games are being developed with the motive 'learn while playing'. Educational carrom board is one of these games. The whole project deals with many disciplines of education, namely chemistry, physics, mathematics, English, Panjabi, geography and so on. The present article deals with mathematics The article dealing with chemistry, 'Chemico carrom board' (this game was one of the exhibits of National Science Exhibition for children held at Teen Murti Bhawan, New Delhi in November 1977) had already been published in one of the NCERT's Journals School Science, June 1979 issue. 'Physico carrom board, dealing with physics has also been developed.

Game of Conversion

The educational carrom board resembles with the usual carrom board. It requires some dities (black and white) representing some qualities. There are many sets of dities corresponding to different games. Some of them are discussed below.

Conversion of rupee into paise and vice versa with some decimal figures has to be taken into account. Marks have to be given in sets One set means a diti representing rupee (from black dities) and a dity representing paisa of same amount. One who collects more sets will obtain more marks and will be the winner.

Game of Symbols

Some symbols which are commonly used in mathematics is the focus point of this game. All the dities have a symbol representing some quantity such as angle, square-root, affinity, etc. The name of quantities is given on front side of dities. On its back side quantity and symbol is given to check the result.

Game of [illegible]

In this game one black diti and one white diti have to be collected in such a way that the addition of integers on both is a complete square-root. More such sets means more marks. Other games developed for mathematics are for addition and subtraction, values, multiplication and division, square, symplification, and 'test your knowledge'. Details of the key-boards for these games are given below. If the players have no knowledge of the method then the back side of the key-board may be kept in

1 DETAILS OF THE DITIES FOR ARITHMETIC

Games	Colour	Figures written on the dities	Marks	
Conversion	White	5, 10, 2, 20, 50, 7, 4, 3, 30, 40	10 marks for each set	Zero marks for the queen
	Black	$\frac{1}{20}$, $\frac{1}{10}$, $\frac{1}{50}$, $\frac{1}{5}$, 5, 07, .04, 03, 3, 4		
Symbols	White	<, >, ≠, ∵, ∴, ×, ⁓, ɕ, ⊥, △	5 marks for each symbol	
	Black	∝, π, ⊙, %, ″, √‾, ≡, —, ·˙, ∩		
Square-Root	White	24, 14, 6, 21, 4, 10, 2, 1, 16, 15	10 marks for each set	
	Black	1, 2, 3, 4, 5, 6, 7, 8, 9, 10		

2. DETAILS OF THE KEY-BOARDS

Game of conversion . One side is blank On its back side correct answer of conversion is written. As 5, 20, 4, 30, N.P. are written in front of Rs. 1/20, 1/5, .04, .3 respectively and so on.

Game of Symbols : The front side is painted with the quantities for which these symbols stands As greater than, less than, not equal to, because etc. are on the front side. On the back side quantities as well as their correct symbol is written in front of each.

Game of Square-root One side is blank On its opposite side one integer of black diti and one of white diti has been so selected that their sum is a complete square. Both the integers and square-root of their sum have been written in one line.

view during play. If the game is to be used for recapitulation then front side should be kept in view

Games of Algebra

Game of addition and subtraction : Each diti (black-white) is painted with some algebraic quantity. These dities are of varying value having different coefficients and powers. There are powers up to four. One will add his quantities taking care of powers and will compare with the result of the other player. Corresponding to 4 powers there are 25 marks for the more value of each power. In case of dispute some elder or the teacher may be consulted

[illegible] This game is to give some elementary ideas of powers and roots. Black dities have quantities with root sign and corresponding to its

value there is a white diti After finishing the game such a set will be counted for marks Check the result from back of the key-board

Game of Simplification : Varying quantities of different coefficients and alphabets are mentioned on the dities including the queen. Marks for each alphabet can be decided by the player/teacher before starting the game. After the game is over the values will be put up and algebraic sum of one's marks will be calculated. Dispute over more marks can be settled with the help of the teacher.

As in arithmetic some more games dealing with algebraic formulas and rules are there such as game of indices, game of surds, game of test your knowledge, game of square-root, etc. Similarly some games for fundamentals of geometry has also been developed

One the whole hundred sets of dities are being prepared They will be classified as 2M8, 4Ph, 24, etc. The first integer (2 or 4) stands for the serial number within the subject, the alphabet (M or Ph) is the abbreviation for subject and last integer (8 or 24) is the serial number of the set in all the hundred sets. These dities when prepared on commerical basis may cost Rs. 3 per set. One can purchase according to his requirement calling for a particular set number. The whole class can purchase one or two sets per candidate and can interchange among themselves.

Educational Advantages

1. Some rules, formulas for numerous methods, mentioned in the games, will be learnt.
2. Some symbols of general use will be learnt.
3. Results of mathematical operation on some quantities will make a permanent impression on the brain.
4. It is the best method of revision.

Supplementary Advantages

1. Play-way methods are according to the instinct of the child.
2. It will utilize leisure time properly.
3. Teaching-learning process will become enjoyable.
4. Number of truants will be deceased.
5. A better teacher-student relationship will be developed. □

Artistic Success in Primary Schools

BEING PART of our life art gives us peace of mind. Art has the same relationship with human beings as clothes and ornaments have Just as we say that without clothes and ornaments human being does not appear impressive similarly without art also man is incomplete. But art is not a commodity that can be purchased in the open market. It is a gift of nature. Different forms of art exist, for example, painting, music, handicraft, etc. Art and human life are interrelated, therefore, it is quite natural that art must have a bearing on education. Art is not mere lines or colours. It is a poetic creation, something to be worshipped Several scholars had regarded art as the all-round development of human life and also the seat of peace. Art education gives people an occasion for self-expression and also inculcates a healthy tradition in national life. In the absence of art teaching both knowledge and tradition would remain incomplete.

Selection of Aims

While putting into practice any programme it is necessary to identify its aims and also act accordingly. The aims of the programme are :

1. To create interest about art among children
2. To create respect for work among children and thereby make them self-dependent
3. To create conditions so that children can work accordnig to their aptitudes
4. To be able to make children take decisions about their work
5. To enable children to work in a free atmosphere
6. To enable them to take decisions about their own life and practise self-help
7. To create interest in them for decoration
8. To help children in making toys and assist teachers in the teaching of preparing material aids

The aims of any project are determined by its size Therefore, if a project is small, the aims would also be limited. In the session 1979-80, I worked with 25 students of Class V and experimented with them.

Hypothesis

Children take interest in their studies as per the motivation and encourgement they receive from their teachers. New experiments depend on the intelligence of the teachers. If a teacher is ready to undertake his work with interest this certainly has an influence on his students If a teacher enables his students to take decision and has certain expectations from them in that case the teachers can bring about changes in teaching. But we must consider the following points as well.

1. *Freedom of thought :* The children should be given freedom to express themselves. They are like earth and the teacher is like a potter. He can change his students in any way he likes.

2. *Freedom of expression :* It is the duty of the teacher, the institutions, and the parents to provide facilities so that children may express themselves in any way they like, i.e by dancing, singing, painting, exhibition, etc.

3. *Constant changes in school decoration :* It has been observed that changes help a good deal in original thinking. Therefore, it is necessary that according to time and circumstances school decoration must change. These changes should take place in the school compound and in the small garden attached to it.

4. *Educational system and atmosphere*
In the educational world everybody is making efforts. Everyone tries to improve upon his earlier performance and makes changes in the environment.

5. *Creativity :* It is a necessary part of self-expression and this experiment can be very helpful in making one original.

6. *Research work* Children differ in abilities. They have a natural tendency to store and are curious. Therfore, they were given opportunities to collect things like stamps, coins, flowers and leaves and roots, stones and coloured glasses. They make albums of the coloured-wings of different birds. In this manner they got full freedom to move around in the open atomosphere and they found time to examine everything closely. This was a great joy to them. They were made to collect waste materials like paper, clothes, wood, etc. and asked to preparc toys in this manner. Even waste material was put to use in the from of educational material. In the same manner children were asked to perpare albums out of paintings made by other children both in the country and outside. This helped them to exhibit their imagination. Children started making toys, painting pictures, and preparing models. They were happy because they had an occasion to express their inner drive They were shown art pieces. For example, in the excavations of Harappa

and Mohenjodaro, etc several art pieces were found. In this way they were made to feel interested in perparing art pieces out of clay. A person can become original only when he is not taught merely the philosophy and the principle but is also permitted to put the same into practice. All this gives pleasure because something has not been imposed on them but because they do have their 'free will' !

The Importance of Clay Work in Education

Handicrafts have their own educational value They help children create and express themselves. Children have a natural tendency to be creative and if they are given no opportunity to create anything they become dull. Therfore, they should be given equal opportunities and be enouraged to realize their potential.

It is necessary that in the primary classes children are allowed to do clay work. They should be taught how to use earth in different forms This will teach them not only different forms the earth can take but also permit them to perpare desings for the purpose of their self-expression In being creative earth has an important role. It all depends on an individual how he moves and recreates his environment Whenever it is possible classrooms should be decorated with the work undertaken by children

themselves All this depends upon the teacher himself. An ideal teacher can do wonders in ordinary classes and with average students.

Steps of Work

If only one proceeded on objective lines one could achieve one's objectives The following steps may be followed in this connection :

1. Children should be free to work as they choose
2. Their work should be occasionally supervised and suggestions given
3. A teacher must exhibit his work done under his supervision
4. Positive suggestions should be given to children
5. A conducive atmosphere should be prepared so that children are

able to take their own decisions and work according to their tastes.

6. A child should be permitted to imitate and use his imagination in clay-modelling

Equipments for Clay Work

For every child there must be space, i e 1 sq. m. and it must be fully lighted Children should have facilities and raw materials, etc. The floor should be clean and the classrooms should be decorated with the children's work. The children should be given boxes to store Equipments like spade, thrasher, cups, brushes, plaster of Paris, etc. should be provided. Special care should be taken so that things made are inexpensive, beautiful and useful.

Earth has two components. One helps it to remain smooth and the other makes it hard. In different provinces different types of earth is found. Normally earth found in ponds should be preferred for this work. Bigger pieces of work should be reduced to powder and water mixed with the same, and if the earth is ready to be used children should be asked to prepare different designs both by hand and in moulds These moulds can be perpared in the classes according to the designs children themselves have made. They can prepare designs of animals, birds, flowers, vegetables, etc. Children should be taught how to use these moulds. It is necessary that certain precautions must be taken in earth work. For example, children should not keep earth in their hand for long. Hard earth should be crushed not by hand but with the help of a hammer After children have done some earth work they should wash their hands and use vaseline. If earth falls on their clothes they must clean it with the help of a brush When earth is ready to be used dust should not be permitted to get stored on it. Designs should be bright in the shade. Moulds should be covered with wet clothes. The cloth should not either be very wet or very thick. The designs prepared by children should be coloured only when the material is bright Teacher should guide at this stage.

Problems

In this kind of teaching a teacher faces several types of problems. For example, our educational system provides a possibility that an untrained teacher may also be assigned these classes. A creative child who is extremely anxious to prepare toys is prevented by his parents not to do so. There are several limitations because of social demands but a good teacher must remain steadfast to his duties and continue guiding his children with confidence, patience and courage.

Conclusion

If children are properly rewarded or encouraged they cease to be unattractive. In fact, they feel highly encouraged if their work is exhibited or taken to the market or used in decorating their classes Those children who used to waste their time would not do so if they keep some material benefit such as rewards, money or even encouragement. The children will feel interested in coming to classes, thereby earn the credit of their parents In this manner it is possible that the attendance of the school would also go up There is no doubt that the nation would benefit immensely by the self-confidence and self-dependence of the children A time will come when proper stress will be laid on industrial development and people competing for the same. We hope our dreams for a better future would come true and India would become once again a prosperous country.

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Achievement of a Small Children's Library

EVEN very ordinary things could result in great achievements. I had my first-hand experience when some two and a half years back I started a

small library costing initially Rs. 33 in memory of my maternal grandmother

How did the Library Start ?

Punjabi has only three children's magazines I subscribed to all the three. When my children had read them for a few days I used to bring the same to the school. I would recite a poem or two, or relate a few jokes in the morning prayer which generated interest among children to read. I got these magazines properly bound in the form of magazine books Besides school children even their peers and siblings took advantage of reading the same.

Table Reading Room

What is interesting is to know that several middle and high schools subscribe to these magazines but these schools have no system of issuing books or magazines. In fact these magazines finally find themselves in the *kabari* market. These very schools keep books under lock and key. They rarely think of issuing these books to anyone They feel no need for developing reading interests among children. What a pleasure it would be if only they could keep the bound copies of the magazines on a table so that children during school hours could browse through and take advantage

Low-cost Binding

Within six months nine magazine books had accumulated I bought cheap cloth and binding-paper from the open market for paise fifty only. I made children prepare glue and learn to bind these. It was interesting to watch how these children learnt to bind. My work was over in no time I started issuing magazines for a day but these bound copies were issued for a week or so. I made children read in the class and thereby corrected their pronunciation and other mistakes. They learnt to read soon too.

The Next Programme

Every six months I get nine issues bound and in two and a half year's time I have 34 magazine books. One person was issued 30 such magazine books for a period of six months. In this way I could continue lending to others This has helped many a child to develop permanent reading interests. Others could follow suit.

A Few Solutions

May be you suspect children would not read these old books with interest. But my personal experience belies this suspicion Indeed, whenever they come across something interesting—say, a poem or a story—the demand for borrowing magazine books goes up. Also, children preserve and maintain these books well Other teachers also collaborate with me because they have no fear of the loss of these books or paying fines, etc. No departmental report is necessary and in fact we have not forced any problems.

Achievements

1. *Self-confidence :* Children have developed confidence in themselves. As their reading habits have improved they do not complain about not having read a given lesson in the class because they can master it on their own.
2. *Singing rhymes :* Children have by now mastered songs, poems, jokes and puzzles and remember small stories too, which they love to relate and recite in prayer gatherings. In collective songs children of Standard I and II also

participate They overcome their original shyness.

3. *Individual subscribers :* The guardians of children would be happy to note the pleasures of reading their children derive But nobody tell these guardians the value of these magazines When I suggested to a few well-to-do persons to subscribe they did so happily.

4 *Splendid success :* When children see jokes and puzzles in these magazines, they read them with pleasure They read after that they are familiar to them What confidence they get when they read their famliar jokes or puzzles !

Suggestions

One day I told them that if they collected jokes or puzzles I could send them for publication. Several students came forward the very next day. I got these items collected and got them published in Punjabi magazines in 1976. One of the students had his story printed in a leading journal and also had the good fortune of receiving honorarium

Several children read Hindi magazines These could also be subscribed, got bound and circulated. One could develop a similar library in Hindi too. In middle and high schools too teachers can run similar projects. Teachers in these schools have the advantage of having a little senior kids. Here classification of material is possible. Also, children in these classes could be motivated to be creative This would prevent them from going astray.

Would you like your students to feel interested in this simple and easy work ? Would you wish them to be creative so that they may help build a better future for the nation ?

SATYA PAL 'BHARAT BHUSHAN'
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Generally, art teaching in classrooms is not given due importance. If in some schools a little attention is being paid it is done in such a crude manner that even an interesting subject becomes boring and creates distaste for it. A teacher will enter the class and ask students to make some drawings while he himself attends to another work. He has no time to see whether children have art material or not and whether they really are attempting any art work or not. Art period itself holds no attraction to these teachers.

In schools an exclusive teacher for art teaching is a must. Art is such an interesting work that children learn it gladly. It is necessary for an art teacher to make children feel interested in art work It is simply tall talk to assign art work orally to children under the excuse that it enhances their power of self-expression. In fact, a drawing of the subject should be drawn on the black-board and children may be asked to copy the same. This would enable them to imitate lines and gradually through exercise They would be able to draw from imagination. In that stage assigning of subjects orally would be adequate.

Encouragement is an essential part of art teaching. When the art work done by children elicits admiration they beam with pleasure and also feel interested in their work In primary schools children should be shown pieces of good art so that they may learn art appreciation.

An art teacher ought to know the steps of developing interest among children in art These steps are given below :

1. The manipulative step -- In which a child may use pencil, brush, etc. freely and expresses himself in lines drawn haphazardly
2. The second step consists of attempts made to draw figures in colour.
3. In the third step lines are drawn to indicate human figures.
4. In the next step the child tries to point out the difference between the inner and outer sides of an object.
5. The fifth step is of being a realist or abstract. The realist paints the objects as they appear and the abstract artist his impressions of the objects.

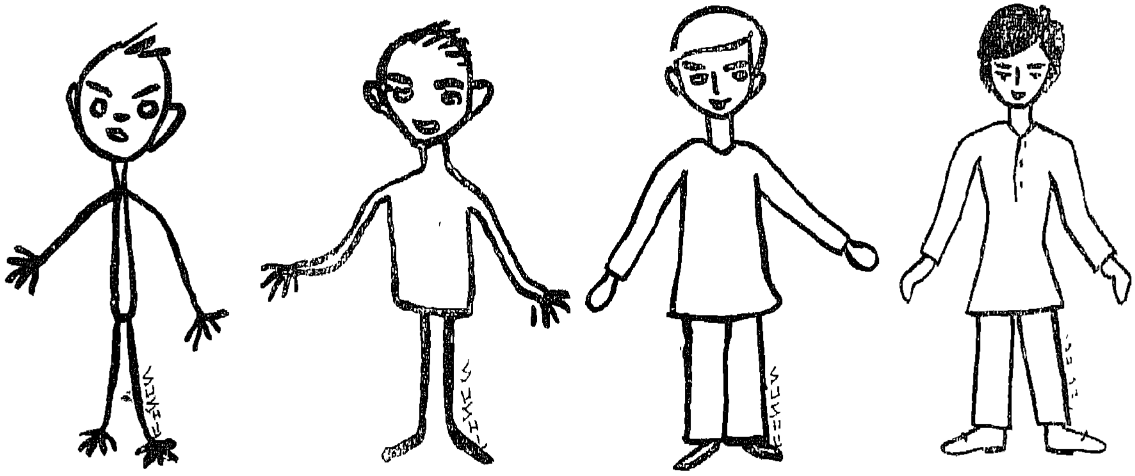
The work of an art teacher is to encourage and inspire the children without inhibiting their creative talents

The art teacher should start by drawing some figures on the blackboard He should then watch students drawing the same and give adequate direction Children would thus learn to give stress to the lines. After seeing the last stage of drawing, children should be asked to colour the same. It is always advisable to colour at least one drawing by the teacher himself This would put them in good humour.

Please see how children draw the pictures shown on page 51 :

In order to develop interest in art work, drawing competition could be organized on children's day. Prize distribution in cash (say Rs. 15) could go a long way to create zest for art The same drawings could be used for exhibition purposes

A fortnightly wall paper could also be



brought out which may contain children's drawings, news, etc. The art teacher should be made incharge of the whole thing This paper may be displayed regularly on the same spot. This would help popularize art in the school.

I faced once problem of untidy copy books being kept by children. I made children to prepare cover designs in the class itself which made them keep their copy books clean, artistic and tidy These children had a problem of not bringing colours to the class for the fear of the same getting stolen Also their parents were not rich enough to buy colours for them often. A few were afraid of their friends lest they should use these colours I purchased a colour box from school fund and this helped them to overcome their financial problems, fear of theft, etc. Those who had colours started bringing their boxes without any problem.

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Mathematics and Human Consciousness

NATURE has gifted to us equipments in order to acquire knowledge and these are called senses. A human being can see, hear, taste, smell and feel That is why he is called 'conscious'. Since after death these senses stop functioning we call such a person unconscious or dead. Despite the fact that all human beings have senses, the level of their sensory development is unequal There are several reasons for this If we were to leave aside congenial causes, the personal atmosphere of each individual such as insight, the educational system, concentration and foresight, etc. have their own role Besides these, facts like hard work, firmness, self-confidence, truth, love and sense of duty, etc. have a bearing on an individual's character Both education and environment take time to influence an individual's character The aim of education is to develop a higher level of consciousness so that a person may be able to excel others. It is, therefore, quite natural for one to learn how to be better than others. If we were to read the lives of Aurobindo or Swami Ramakrishna Paramhans we will notice that they had an extraordinary state of consciousness which is absent in ordinary educated people While Swami Paramhans was illiterate, Aurobindo had received the highest level of education. Still both had the ability to reach the same state of meditation unaffected by their different types of background. This simply means meditation and consciousness are interrelated to the former being an essential ingredient of the latter.

What then is this meditation ? It is the highest state of concentration where man tends to forget his environment. It is necessary to remember that this state of mind is quite different from the medically induced state of unconscious. This 'meditation' can be learnt (or reached) by exercise, the *Yoga* being one The days of idol and devotion seem to have gone. Modern technological developments have so entangled the man that he can't even identify proper methods of getting out. Mathematics can be an easy instrument for reaching the state of consciousness. Of all the subjects mathematics can help us concentrate in the void. It takes time to reach this state of mind From this point of view music is also good because the sound in music is always present materially. Perhaps this seems to have prompted Socrates to declare : "Those who know nothing of Mathematics or Music should not see me".

One of the special features of mathematics is that whenever one likes the abstract forms and figures can be given material forms The prime numbers 1,2,3,4, etc. are such examples. Although man learnt about these numbers from the material nature of the world, they are abstract. The credit for learning about zero goes to India and that too is a number. That is how development in mathematics took place. Afterwards man learnt to subtract If you add two whole numbers we could reach another whole number. Thereafter one learnt the mysteries of division and multiplication There are a few equations like $X + Y = 0$ in which when the value of X was learnt it was found that the solution need not always be in whole numbers. For example $x^2-2=0$ tells us that this equation is beyond finite numbers. Since the whole numbers have a serial order the finite numbers also have a serial which means out of two unequal numbers one would be smaller than the other

In our ordinary day-to-day life common sense plays an important role. But common sense can be terribly confusing. In 'cycloid' if a particle suspended in the middle is linked to a corner and the one is linked to another in the middle both reach the end simultaneously. The common sense would suggest that the one in the middle would reach before the one in the extreme opposite corner Insight plays an important role in mathematics. Insight can be shown to be related to the fundamentals. In mathematics we not only seek the truth but also perpare a touchstone to examine it. It is obvious that mathematics has all the componets of meditation which result in concentration, intelligence, consciousness, hard work, etc. which we have already talked about earlier. Besides, a sixth sense can also be developed. This has additionally the potential to develop personality because a true mathematician is the very image of politeness because he realizes constantly his relative knowledge as compared to the vast unknown. No mathematician is a great scholar because a good mathematician would forgive such a person as ignorant who addresses as a master-mathematician. It is unfortunate that India unlike the west accords no great status to these mathematicians.

If we wish to regain the stature India once had we shall have to both worship mathematics and devote ourselves to its proper pursuit.

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[illegible]

[illegible]

THROUGHOUT the world ten per cent of children suffer from handicaps calling for special education But in many countries less than one in a hundred with learning difficulties actually receive this education, reports Toby Burke in *Unesco Features*.

Calling for new priorities for special education, a group of experts who met in October 1979 at Unesco's Paris headquarters to advise on future activities by the Organization, made a plea—perhaps paradoxical to those not concerned with the handicapped—that special education should not be too special.

Integrating the disabled person as fully as possible into the community, the experts agreed, must be the basic aim of any action on their behalf. Isolating handicapped children resulted in prejudice, psychological barriers and fear of the unknown based on simple lack of information, they argued : and they advocated integrated education whenever possible to avoid perpetuating discrimination against the handicapped.

Provided that the authorities have a clearly stated plan to meet the needs of the hadicapped students, placing them in ordinary school settings is the first step to integration within the community, said the experts, who came from 14 countries of the industrialized and third worlds. They pointed out that this approach not only makes it easier for handicapped children to adapt to ordinary living but also saves on the cost of separate buildings and specialized staff.

However, they agreed that conditions varied widely from one region to another and that types and degrees of handicaps also differed. Countries should study what was best suited to their own conditions and should develop education strategies offering as wide a range of choice as possible. The international experts agreed that there was a need to get away from the habit of labelling and categorizing children in restrictive terms which tended to stigmatize them throughout their life-time, special education should be viewed as educational action for all individuals who suffer (or risk suffering from serious difficulties in learning and in adjusting to normal educational demands and opportunities.

Early detection and intervention is indispensable for the successful integration of handicapped children into regular schools. Children may, for example, be thought to be slow in learning to speak when in fact they suffer from hearing defects or they may do badly in sums simply because they cannot see what is on the blackboard.

The primary responsibility for detection falls on parents, said the experts, urging that they must be included along with medical experts and others, apart from educationalists, in early action Parents should be supported and given guidance in taking a personal part in the education of their handicapped children.

Ideally, special education should begin at home, and home-visiting services should be provided from the first weeks of life.

The experts also laid down some other ideals for all special education services. Such services should be :

(*a*) custom-built to meet the needs of each student on the basis of his needs and the goals it is hoped to achieve;
(*b*) locally accessible, within reasonable travelling distance of the pupil's home; and
(*c*) comprehensive, aiming to serve all people with special needs, irrespective of their age or the degree of their handicap, so that the education they get is not below the standard of that received by normal students; offering a variety of choices in keeping with the needs of the community.

Among the priorities proposed for Unesco's future programme was the provision of regional advisers in this field as well as training of teaching staff, which was everywhere felt to need concerted action. One way to get this moving, it was suggested, was to include special education in all teacher training courses

During 1981—International Year for Disabled Persons—the experts urged Unesco to seek to break down the berriers which keep handicapped children from being educated in regular schools. They called for a regional workshop to design teacher-training curricula to prepare for such an integration. At the same time, public information programmes needed to be set up to help create a climate in which handicapped persons were readily accepted in the community.

[illegible]

Recent years have witnessed increasing concern in OECD member countries for the problems of handicapped young people, and in response to this a project was initiated by CERI in 1978. More recently it has concentrated on two main areas : the integration of handicapped youth into the mainstream of education and into ordinary schools; and their transition from school to adult life. This work has been carried out in cooperation with government departments, institutions and agencies in a number of countries, reports *Inovations in Education.*

Two recent international seminars, one held in New Zealand and the other in Japan, exemplify the interest being taken on a national scale The first event, held in New Zealand September/October 1979 under the sponsorship of the Department of Education in cooperation with CERI, focussed on the issue of the transition from school to employment or futher education by handicapped young people. Within this context it gave particular attention to such aspects of the problem as the school's role in preparing handicapped adolescents for employment, school programmes which appropriately provide for the special needs of these students, support services to the handicapped from both within and outside the school, the coordination of these services and the matter of the training of both school staff and others who work with handicapped young people

The Japanese seminar was held in Yososuka, from 22 to 28 January 1980 and dealt with the question of vocational education of handicapped adolescents in special schools and classes. It was sponsored by the National Ministry of Education and CERI, and hosted by the National Institute for special Eduction in Japan. Also involved were participants from other divisions of government who have responsibilities in this area and from schools and universities who cater for handicapped young people in their various programmes One outcome will be exploration of such elements of education for the handicapped as current schools programmes, vocational guidance, the preparation and in-service training of teachers who work in this area and the question of cooperation between educational institutions and other agencies involved in such services. The conclusions emerging from these events will be published in two volumes (Intergration and Transition) in the near future.

Other such seminars and conferences are pending during the coming months in Sweden, the United Kingdom, the United States and Germany among others. These activities will be examining such components of the issue as : factors that make an ordinary school a workable setting for integration; the influence of different forms of administration and methods of funding; integrating young people with handicaps into the ordinary school; the provision of special services required by the handicapped in the ordinary school setting ; the concerns of the handicapped themselves and their families and their participation in decisions about their education and further life; in-service training of school and other personnel who are involved in the lives of these young people.

Byelorussian fairy tales published in English

Three Byelorussian fairy tales –"The Horn of Plenty", "How Ivan Outwitted the Devil", and "The Greedy Rich Man"– have recently appeared in an English translation by L Cortes with illustrations by V. Savich, reports *Unesco Features*. Published by the Vysheishaya Shkola publishing House, Minsk, in a large format, soft-bound edition, the stories are respresentative of the importance given to children's literature by Byelorussian publishers. Another publishing house, Mastatskaya *Litaratura*, is bringing out a complete edition of Byelorussian fairy tales It is being published in three volumes The first contains stories about the animal kingdom, the second is a collection of tales involving magic, and the third has for its title, "Listen to others but have your own opinion"

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Besides the educational aspect *School Science* contains a stimulating feature—Science News, which introduces the frontiers of science to the teachers and the curious students Among other regular features, *School Science* presents profiles of famous scientists. Julian Huxley, T.R Sheshadri, Amedeo Avogadro, Jacques Monod, Lev Landau and Werner Heisenberg have so far been covered.

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School Science, you will notice, is meant both for the teachers and their students It is meant to make learning and thinking a joyous process And the most important thing is your participation in it □

JOURNAL OF INDIAN EDUCATION

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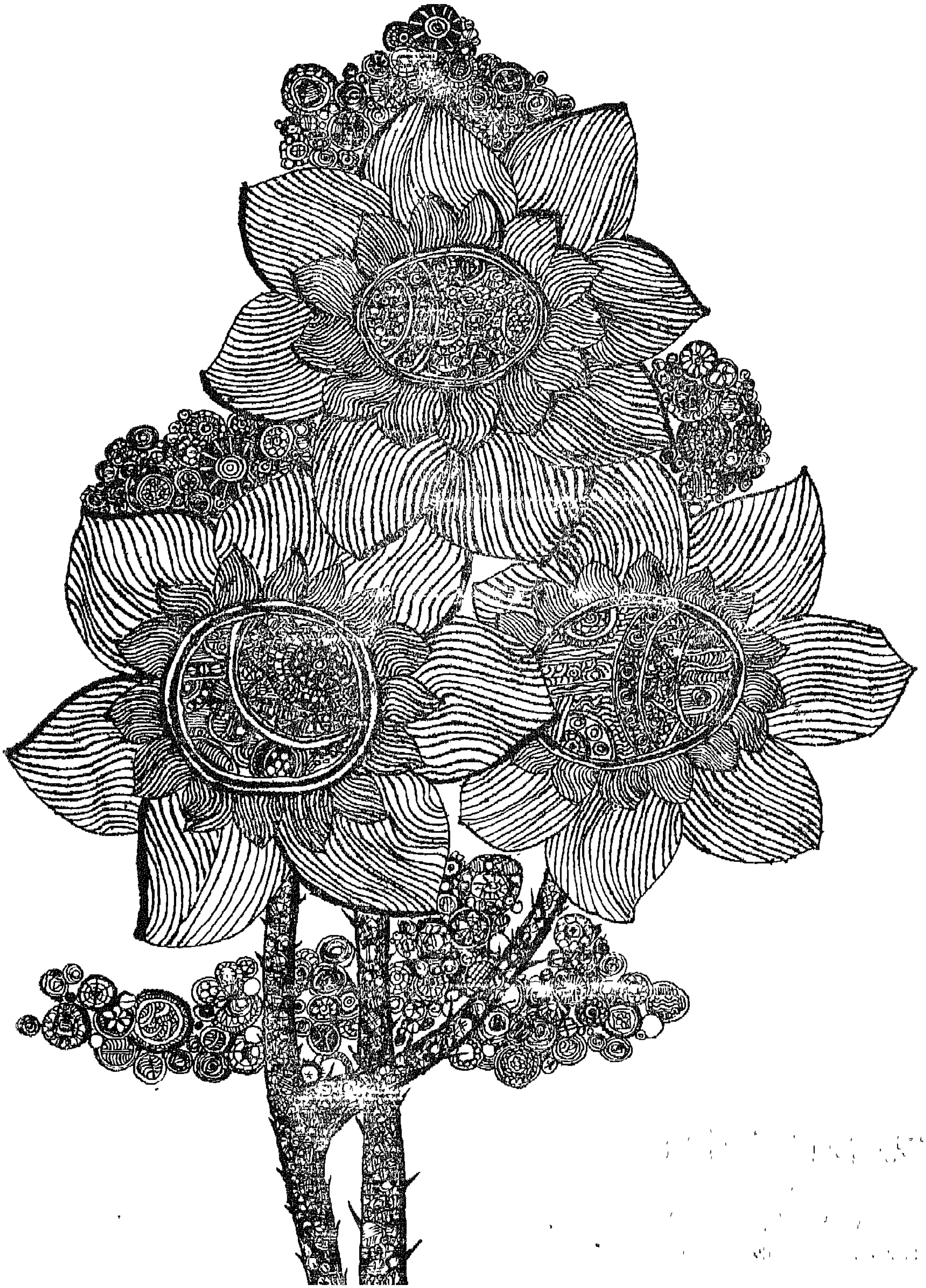
"It is completely obvious that we will never effectively reduce the problem of disability until we do something intelligent about reducing the incidence of impairment. Look at the major causes—malnutrition, birth defects, diseases and accidents—and at the multifaceted action necessary to reduce their tragic consequences. Obviously a vast task, but one that we cannot put aside if we want to reduce the problem of disability."



☐ *The Primary Teacher* is a quarterly brought out by the National Council of Educational Research and Training, New Delhi.

The journal intends to give to the practising teachers and concerned administrators authentic information about the educational policies being decided on and pursued at the central level. It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc., offered at various centres in India from time to time. It also provides a forum for the discussion of contemporary issues in the field of education.

The major features of *The Primary Teacher* are :

1. The educational policies concerning primary education
2. Questions and answers
3. States round-up
4. Illustrated material for classroom use

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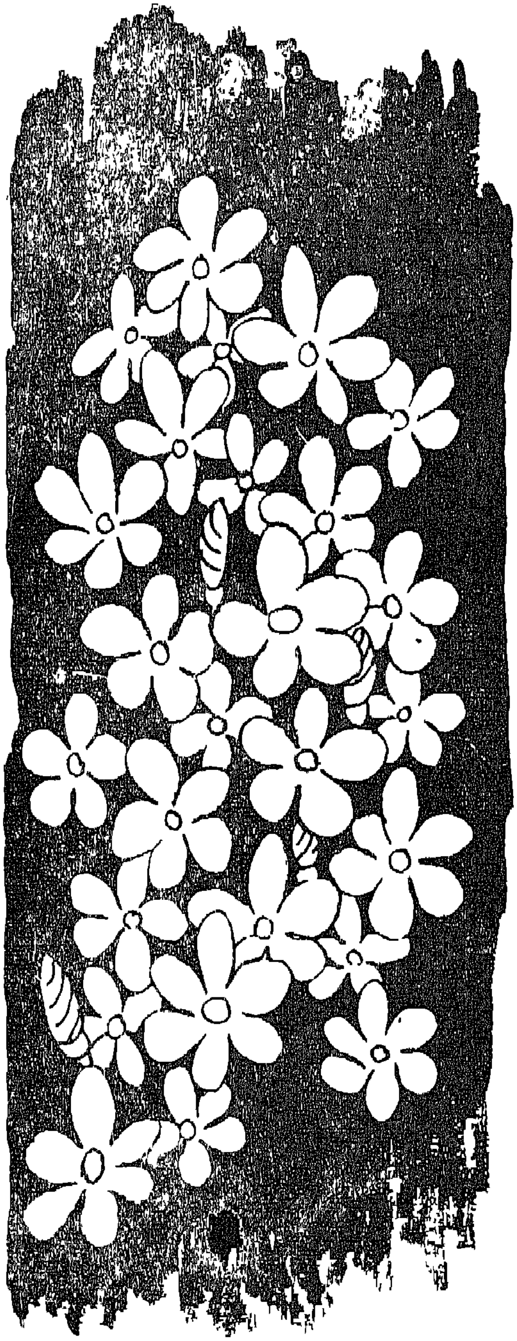
Cover: KALYAN BANERJEE

EQUALITY OF OPPORTUNITY TO LEARN

Each teacher consciously strives to provide equal learning opportunities for all students in the class. However, the actual situation under group instruction is far from this ideal. Observations of teacher interactions with students in the classroom demonstrate that teachers (quite unconsciously) direct their teaching and explanation to some students and ignore others. They give much positive reinforcement and encouragement to some students but not to others, and they encourage active participation in classroom discussion and question-and-answer periods from some students and discourage it from others. Typically, students in the top third or fourth of the class are given the greatest attention and encouragement by teachers, while students in the bottom half of the class receive the least attention and support. These differences in the interaction between teachers and students provide some students with much greater opportunities and encouragement for learning than is provided other students (Brophy and Good, 1970). □



Education and Aesthetics

WE HAVE so far published several papers on art education in primary classes Knowing as we do that all primary schools in the country do not have the good fortune of having art teachers, our emphasis might appear to some quite beside the major issues. To us, however, this is not so Major problems of life and living arise because we never developed an aesthetic sense when we were young enough to learn. The dirt, garbage, unwashed glasses and jugs, ill-fitting clothes and untidy homes, bad manners and foul language have their origins in the non-aesthetic development of the child. Spitting and urinating at sweet will could also be curbed only if we could help young children appreciate order and beauty in Nature The rising and setting sun and the moon leave on our minds unforgettable visions of beauty and splendour which only Nature could offer. In darkness a simple look at the sky could perform magic for our sense of awe and wonder The dark void is studded with beautiful shining stars as though the same has been done on design. Seasonal flowers and greenery, the flowing water and the unlimited seas, the hill and the dales—all strike on our senses pleasurably. Even if all of us do not have the sense of appreciation a Noorjehan or a Jehangir would have. We cannot help being moved by the sheer splendour of colours running riot in Nature. If only we could feel the glory of the quiet mountains or the sobriety of the ocean we would not be what we are.

For teaching aesthetics situations could be created in schools in general and classrooms in particular. Art works could decorate dusty corridors of schools and bring in a fresh life to school by planting flowers within and without classrooms. Teachers could teach sense of colour to children and help in the appreciation of explicit beauty all around. Perhaps a move in this direction by sensitive teachers would go a long way in making our lives tolerable. □

[illegible]

ANIL K. SAXENA
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NOW A DAYS there is a stress on the individualized instruction. Science learning centres are appropriate for it. In a science learning centre there is a plenty of open-ended activities to be carried out by the students A student learns the things at his own rate from a science learning centre According to Gega (1977) :

> A science learning centre is a place where one or several pupils at a time can do activities independently through materials and directions found at that place It may be arranged so that children may choose the activities they can do, or are interested in and work at a place that is right for each person Some teachers also permit children to select the times they go to a centre, and partner to work with, if any

A science learning centre to study about magnets for Class V students may have the following materials :

Photo : Unicef

1. Two bags of small objects and magnet, shoe-box, small scissors, small and large iron nail, sticky tape, strong magnets, a sheet of lined paper, pencil, two meters of wire, and flashlight batteries
2. Worksheets for students.
3. Activity cards
4. Record-book, etc.

The following explanatory problems can be undertaken using the above-mentioned material ·

1. How can we find out which objects and magnets can pull ?

2. How can we find out if magnetism can go through materials ?
3. How can we find out hidden objects with a magnet ?
4. How can we find out the power of a magnet ?
5. How can we make a magnet ?
6. How can we make an electromagnet ?

All these things are arranged in a corner. On every activity card, activities to be carried out are written with directions. 'What to do card' is put so that students may read and follow accordingly. It is usually written on 'what to do card'.

1. Choose activity cards and worksheets to do
2. Record what you did.
3. Place finished worksheets at an appropriate place.

In good science learning centres a tape-recorder and other appliances are put. To motivate students stories on the topic concerned are put to read and for older and more able children some advanced explanatory and discoursive problems are suggested. Taped instruction and teacher aids are additional possibilities.

How to Make Science Learning Centres ?

According to Gega the teacher should consider these matters : *(i)* Purpose and objectives, *(ii)* activity cards and worksheets, *(iii)* materials and their resupply, *(iv)* record-keeping and evaluation and *(v)* the physical set-up. Let's examine how each of these matters affects the making of a learning centre

[illegible]

The purpose of the centre must be stated A learning centre may be used for enrichment or support of the text. It may complement a unit or cover whole unit Performance objectives should be defined Supervision policy of the school should be known before we make a learning centre. We should know whether students are allowed to work outside or not In addition to this we should know whether students will be able to work without interfering with others or not.

Activity Cards and Worksheets

There should be inclusion of open-ended activities in the learning centres. The activity cards should give simple directions regarding the procedure and the material required to carry out an activity. These cards, at elementary level, should be colourful and large in size so that students are motivated to carry out the proposed activities. Simple words, short sentences, drawings, etc. should be used for cards. Worksheets should be prepared for students to record whatever they do.

A sample[1] of activity card and worksheet is shown below .

ACTIVITY H 2

Take Soaked bean seed, soaked pea seed and a paper towel
Do. 1 Open each seed. Use your finger nails
2 How are the inside parts of the seeds alike ? Different ?
3 Do worksheet H 2

WORKSHEET H 2

Growing Seeds

Draw a picture of the inside of each seed.
Bean seed
Pea seed
Scientist

Materials, Storage and Resupply

A list of local materials, printed materials, audio-visual materials, museum loans and collections should be made for a learning centre. We should decide better ways to package and store the materials The teacher should know when to resupply the materials to the students. This can be done with the help of a list or an inventory monitor.

Record-Keeping and Evaluation

The teacher should prepare a master list of activities and objectives on which he can record pupil's progress. To keep track of progress the child should be provided a record sheet or record book as shown in the next column.

The teacher should observe centre activities on a regular basis He should view worksheets, constructions, reports, drawings and child's science folder He should also arrange informed and scheduled conferences with the children.

RECORD SHEET

Science Learning Centre on Magnets

	Circle	*Activity finished*	
1	11	21	31
2	12	22	32
3	13	23	33
4	14	24	34
5	15	25	35
6	16	26	36
7	17	27	37
8	18	28	38
9	19	29	39
10	20	30	40

Scientist

Arranging the Physical Set-up

The centre should be located where there is enough water and sink, electric outlet, wall space, etc. The teacher should try to make it more attractive.

Introducing Science Learning Centres

The teacher should give pupils a thorough introduction to the science learning centre and describe carefully : *(i)* What to do at the centre ? *(ii)* How to get and return materials ? *(iii)* Where to put completed work ? and *(iv)* How to get help if needed ? □

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[1] Adapted from Peter C Gega *Science in elementary education*, 3rd edn., 1977, p. 96

Helping the Retarded Children [illegible]

P HANUMANTHA RAO
Hon Executive Director
The Hyderabad Special School, Andhra Pradesh

NECESSITY and possibility are not the only aspects by which we must be guided We believe it is the duty of the talented to help the less talented to fulfil his human vocation The less talented can learn to obey and thus manage by lead and in this way he takes part in the vital task of those around him. But the mentally handicapped child in practice remains an enigma for his parents. Only the appropriate educational test makes it possible to deduce the real possibilities in each case They are different from those of the talented child His relations are based on friendship founded on kindness He understands a great deal with his heart, whereas his reason has no grasp of the problems of life of others It must not be forgotten that the occasions which are most certain to educate are the eventful days in his life. The life is a gift for him and the tasks assigned to a handicapped child should have a bearing on his 'achievements' in life.

Basic Needs of the Retarded Child

The needs of a retarded child are basically the same as those of his normal brother He needs food, clothing and shelter. Like his normal brother, he needs spiritual, mental and physical stimuli, which will help him to reach his full potential and also help him to find an acceptable and sometimes contributing place in the society in which he lives.

Courtesy Unicef Photo Chitrabani

Love

A retarded child needs to be loved, just as any child needs affection, whether he is normal or handicapped, learning at home or in a classroom, living with his family or in an institution He needs someone to talk to him, simply and patiently, someone to listen to him, even though his speech is most dicfficult to understand

[illegible]

Everyone needs to feel that he is accepted A retarded child needs to be accepted as he is with all his limitations Being part of a group, a family group or a class group, and doing things with other people can give this feeling of acceptance Doing something may be as simple as helping one's mother to smooth out the wrinkles on a bedspread In time, it may be playing a circle game or taking a trip.

Because of his limitations, a retarded child seldom joins a group spontaneously He is like an infant who plays alone and has to learn to enjoy people around him He must work into a group situations gradually—first, the family, then, a play group and perhaps, eventually, school and society at large He will benefit greatly if he can also develop a feeling of religion, a sense that he is loved and accepted by God and that he has a place in the universe He must know exactly what he is expected to do He deserves, and enjoys, praise when he does things 'right' Receiving praise for doing something 'right' is a sign of acceptance It also satisfies another need-achievement.

[illegible]

When we speak of the achievement of the retarded child, we have to accept a special philosophy of advancement. We cannot compare him with other children We must accept each individual as he is and then look for each small sign of growth, rejoicing in it. When a child, who day after day has sat alone, showing no sign of emotion at last faintly smiles as he accepts a preferred apple from his mother, he is achieving If he eventually joins a circle of children playing a game, his achievement may be greater for him than a grade of one hundred on a test paper would be for his normal brother If a child who has run ceaselessly and aimlessly around a room day after day, at last sits still in the family living room and listen to a record of music, he is achieving and his achievement should be recognized and praised.

[illegible]

Many retarded children have physical impediments Their coordination is often very poor Through games and handicrafts, they may develop their muscles large and small and improve their coordination. They develop mentally, but at a very slow rate Mental achievement must be measured by each child's personal yardstick. Learning to listen, matching colours or objects, counting one-two-three are all mental achievements which may not come naturally but which can often be taught through play.

Do for Others

A child needs to do for others This is part of acceptance and part of achievement. He needs to help to set the table, to put the milk bottle on the porch, to scour a blackened pan until it shines. He needs to feel needed As time goes by, he may be able to make something that someone else can enjoy—perhaps a decoration for the family Christmas tree.

To Create

All people desire to create. Retarded children are not creative in the general sense of the world, although many of them have definite aptitude for drawing, singing, or playing a musical instrument As a rule, they do not originate ideas and execute them. Yet, they find fun in "doing something myself". This does not mean "all by myself" A parent or teacher must decide just how much he should do in advance and just when she should give assistance so that the child will have a satisfactory finished product and yet feel that the object is his because he worked hard on it. The adult may know that she drew a Christmas stocking, cut it out, and hemmed the edges. The child pasted pretty stars, all different colours, here and there on the stocking The child made the stocking look pretty. He made it himself. He created it

TEN COMMANDMENTS FOR PARENTS

1 Seek medical advice early
2 Adopt as positive an attitude as possible.
3 Avoid feelings of shame or guilt.
4. Give your normal children their deserved share of attention.
5. Spend money wisely on the retarded child.
6. Be realistic in your expectations of the retarded child
7 Try to meet your child's emotional needs
8 Seek medical advice as to having other children
9 Do not covet the child of your neighbour.
10 Help further the cause of the mentally retarded

Discipline

A child needs discipline. There is an old saying · Too much freedom drives us wild ! Most certainly a retarded child finds too much freedom frustrating He wants to know where he stands and what he can and cannot do and still be accepted in a class or by his family. He will have more fun in life when he has learnt to follow rules Games, handicrafts, in fact all activities, have rules.

To be a Demolition Engineer

Someone once asked a very bright little boy what he wanted to be when he grew up and he quickly answered. "Demolition Engineer" All children including retarded children, want to be demolition engineers, although few can phrase their desires so accurately Of course, a child must learn what to break and what not to break. A parent or teacher will have to find things which a retarded child can demolish Quite obviously there are the break-down toys which can be made or brought. There are plasticine clay objects which can be smashed into a ball after they have been admired. Cardboard boxes, after they are no longere neded for play, may be slashed down one side and a child may stamp on them to flatten them Flat empty tin-cans take up less space in a trash-can than round ones Remove both ends of tin cans as the child likes to stand on them to flatten them Or let him pound them with a mallet out of doors. A retarded child need not be any more destructive than any other child He can be taught to break only those things which he is asked to break

[illegible]

A retarded child needs to be known as a preson, a whole person, capable of enjoying life and giving enjoyment to others Play with him. Help him develop. Help him to have fun. □

Developing Primary School Science Curriculum Based on Piaget's Theory

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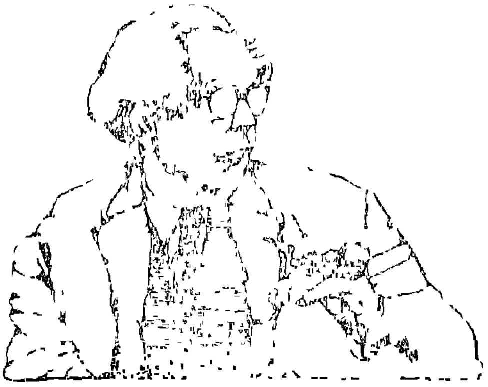

JEAN PIAGET (1896-1980)

THE VALUE of using information about child development as a basis of curriculum planning has been recognized since the time of Rousseau. Besides this, the contribution of subject fields, the needs of society, and information about how children learn are also taken into consideration Donald (1966) states :

> No one area is sufficient for curriculum planning today A combination of the three basic areas—organized knowledge, society, and the individual—seems to offer the best hope for curriculum development

Thus, keeping in mind the objectives of science education, the needs and aspirations of the society, the growth and development, and learning in children, contents may be introduced to supply the facts and serve as the vehicle to provide the experiences from which the desired skills, attitudes and knowledge may be attained.

[illegible]

In secondary schools science has been a focus of attention in the last 20 years, but comparatively little of this attention has been given to carrying the best qualities of science at the primary level. In the early years there is greater need of children's interaction with experiences of scientific nature and also of the qualities of science. The question is How should the qualities of science be inculcated among children ? The question as to what the children and the teachers should do in a primary school was discussed in Great Britain in a conference organized in 1961, under the joint auspices of the British Association for the Advancement of Science and the Association of Teachers in Colleges and Departments of Education. The deliberation of the conference is an excellent example of the perennial debate about the experience-based curriculum In one form or another the suggestions ranged between the following two branches

1 The adoption by the teacher of a programme of syllabus under external guidance or influence In such circumstances the curriculum will usually be systematic or to use the jargon, 'sequential'. It may involve the use of a textbook or a workbook, and it will be suitable for group-teaching and class work It might even, regretably, be the subject of examination.

2 The determination of the curriculum by the desires or motives of the children, which will usually be expressed in questions. Satisfaction will come when experience leads to an acceptable answer especially when the answer produces another question. Every child may be expected to have different impulses, which will not usually be predictable and often be transient. Cooperation will be in small groups.

The first of these two describes the extreme form of the 'deliberate' programme; the second is the extreme of the incidental method There must be a compromise between the two. As Perkins (1962) observes .

> The underlying principles are, of course, the subject of endless discussion and argument whenever teachers are trained · practice will always be based on a compromise with an increasing trend towards the second arrangement

Even the most progressive exponents of 'experience-based' curricula impose on the teacher the duty of organizing experience In its most suitable form this organization has the object of 'producing desired changes in behaviour'. The completely incidental programme is impossible in practice.

[illegible]

In many areas it can be seen that a curriculum could be improved if its contents were structured in a way that would facilitate learning. In certain areas, such as science and mathematics, it is possible to make great improvements in the coherence and sequencing of a curriculum on grounds that are largely logical It is in such areas as these that the most changes in structure have been made. But the need for structuring a curriculum is most apparent in the case of primary school science and mathematics From the curriculum projects completed in foreign countries and in India it seems that the curriculum in science and mathematics has received greatest attention, but there is no doubt that some of the more appropriate of the available principles of learning such as those of Piaget have not been taken as guidelines for the development of curricula As Piaget's theory is more concerned with the developing years of children, this article confines to primary school science curricula only

In Piaget's theory intellectual development capacity goes through a number of stages whose order is constant, but whose time of appearance may vary both with the individual and with the society. Each new level of development is a new coherence, a new structuring of elements which until that time have not been systematically related to each other.

The first thing that is borne in mind while developing primary school science curriculum is that children grow and change Some of the main changes in children are seen to be ·

1. An assertion of independence : This involves an awareness of their unique self that shows in self-reliance, although confidence sometimes fails them and they are self-critical and easily dicouraged. A teacher must always bear in mind their need for success and at times support.
2. A development of discrimination . This involves selection of friends, taste and also interests Much more than before, a teacher should be involved in encouragement of interests.
3. A development of a need to see a pattern in their activities at school . Education must have a real approach that they see as relevant to their life. They seem to want what they do to fit in, to lead somewhere. They begin to search for patterns.
4. A development of the ability to think in logical steps and with abstract ideas : This may begin quite early in a few and in a majority by about the age of 13, but quite a number will not by then have reached this stage.

The second consideration is that we have to keep the freshness and true investigational nature of work in primary science. We also have to keep the openness of the teaching within a developing framework of content and approach This can be done by the following steps :

1. The objectives of teaching science at the primary stage will be stated.
2. The content of scientific knowledge will be determined.
3 Units of work based on learning by experience will be prepared for trial.

Stages of the Curriculum

The experiences in science must range in accordance with the developmental stages of the children. Young children cannot solve theoretical problems in science We need to know how the ability to do so develops in older children and how to begin to present problems in this way at the appropriate point. When the children's activities are in phase with the development of their abilities to solve problems and formulate ideas this gives both the satisfaction of achievement and the spur to further the activity, both mental and physical. The primary school science curriculum may be arranged in three stages Stages 1 and 2 are those in which children develop mental operations through the exploration of concrete objects and materials Stage 2 will indicate a greater facility in handling variables and quantitative measurements. In stage 3 children develop ability to think in the abstract. They, at this stage, begin to deal with possible situations. The thought of stage 3 children is not tied to concrete things or the immediate reality but can deal with what might be. They can begin in their minds to set up a possible cause-effect situation which they can test by observations. They can now analyse the variables in many simple situations and devise experiments to test each in isolation or selected combinations

Before arranging contents in different stages, behavioural objectives related to these three stages have to be worked out. As the time of stages of development vary from individual to individual, it is important to realize that during the primary school education period teachers are likely to have groups of children at all three of these stages in their classes and hence curriculum based on Piaget's line must indicate what is expected at different stages instead of considering different grades or classes

There is a need for departure from the usual pattern of arranging content in some logical order and, as far as possible, in order of difficulty and then dividing it into number of years to be taught. In fact, children cannot cope with the logical syllabus in science. They need some experience of how gases behave in general before knowing about the properties of hydrogen. Curriculum, in Piaget scheme of things, must have sufficient scope for presenting the child with situations in which he himself experiments in the broadest sense of that term, i.e. trying things out to see what happens, manipulating things, manipulating symbols, posing questions and seeking his own answers, reconciling what he finds at one time with what he finds at another, and comparing his findings with those of other children.

Developing primary school science curriculum on the lines of Piagetian developmental stages will be most effective in achieving the goals of teaching primary science. □

Triangular Numbers

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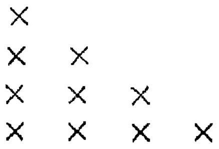
Ten beads can be arranged to form a triangle, as shown in the diagram below. The triangle is made up of a series of lines of beads that are placed one above the other. The longest line is at the bottom, and each of the other lines has one bead less than the line that is just below it. Because ten beads can be arranged in a pattern like this, the number *ten* is called a *triangular number*. If we remove the bottom line of four beads what is left is another triangle made up of six beads, so the number *six* is also a triangular number. If we now remove the line of three beads what is left is the triangular number *three*. If we remove the line of two beads we find that the smallest triangular number is the number *one*.



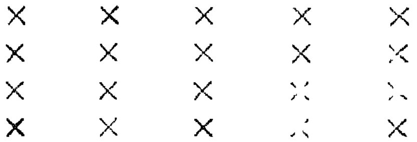
Now if we reverse the process, we can get all the triangular numbers in the order of their size. First put down one bead. Then, under it, put down two beads in a line Under the line of two beads, put a line of three beads. Under the line of three beads, put a line of four beads. Under the line of four beads put a line of five beads and so on. Put into each new line one more bead than the line above it, has. The number of beads in the longest line of a triangle is equal to the number of lines in the triangle. Each triangular number is the sum of all the whole numbers from 1 up to the number of lines in the triangle. The first ten triangular numbers are as follows :

$1=1$
$1+2=3$
$1+2+3=6$
$1+2+3+4=10$
$1+2+3+4+5=15$
$1+2+3+4+5+6=21$
$1+2+3+4+5+6+7=28$
$1+2+3+4+5+6+7+8=36$
$1+2+3+4+5+6+7+8+9=45$
$1+2+3+4+5+6+7+8+9+10=55$

For convenience in talking about a triangular number we shall sometimes use a special way of referring to it : We shall write the letter T followed by a number in parentheses, telling us what place the triangular number occupies when all the triangular numbers are arranged in order of size. Then T(4) means the fourth triangle number, or 10.

Suppose we wanted to find out what the twenty-fifth triangle number, T(25), is equal to. One way of finding out would be to start with the first triangle number, 1. Add 2 to get the second; add 3 to get the third; add 4 to get the fourth, and so on. If we do it this way, to find the twenty-fifth triangle number we would have to find the twenty-four smaller ones first. That makes it rather long and slow process. Fortunately, we can use a short method.

To find the short method, let us first use another way to find out what number is meant by T(4). Take two sets of beads, each arranged in a triangle of four rows. Now let us put the two triangles side by side, as shown in the diagram.



The result is a rectangle. The number of lines in the rectangle is the same as the number of lines each triangle has. The number of beads in each line of the rectangle is one more than that number. So if we multiply the number of lines in the triangle by the next higher number, we find the number of beads in the rectangle. But the rectangle has twice as many checkers as each triangle has alone. So if we divide the product by 2, we get the number of beads in each triangle. In this case we are finding T(4). The triangle for it has 4 lines. Multiply 4×5, and divide by 2, and we find that $T(4)=10$ We can find any other triangular number in the same way

For example : $T(9)=\frac{9\times 10}{2}=45$

(Refer to the table)

Take the number that shows the place of the triangular number, multiply by the next higher number and then divide the product by 2. The result is a triangular number. This process can be couched in a formula :

$$T(n)=\frac{n(n+1)}{2}$$

Illustration

$n=10$ (place of the triangular number)

$$T(10)=\frac{10.(10+1)}{2}=\frac{10.11}{2}=55$$

(Refer to the table)

Thus, any positive value of 'n' in the formula yields triangular numbers □

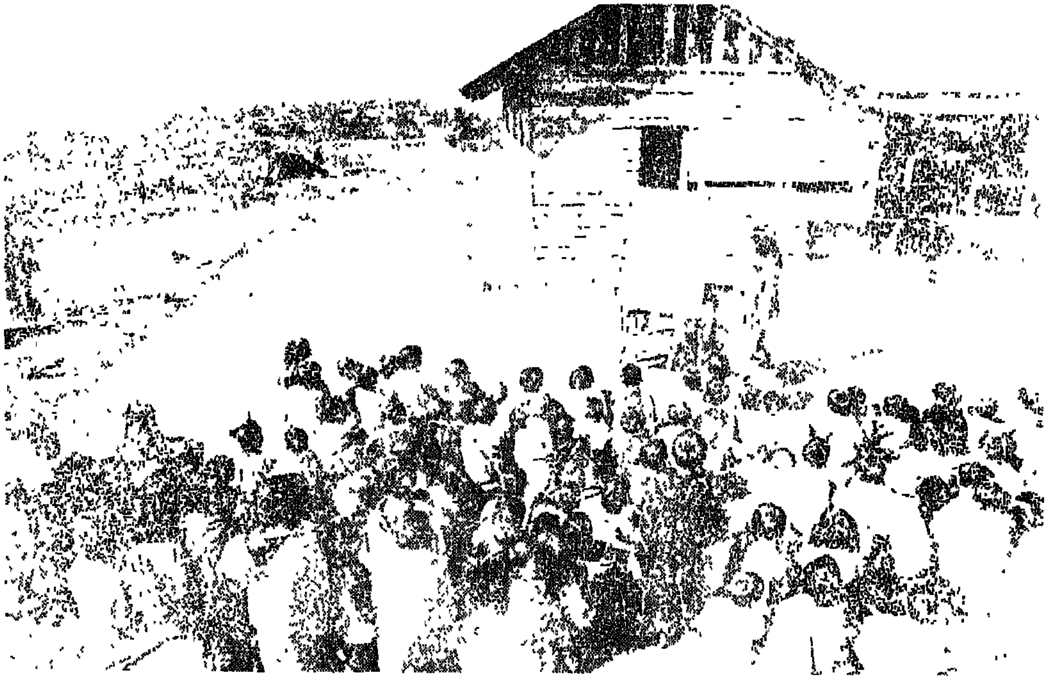


Photo : Unicef

How to Make the Primary Education More Effective

QAMAR UDDIN
Department of Measurement and Evaluation
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OF THE TOTAL education, the education of the child at the early stage is considered to be the easiest by the teacher, the parents and the community. The teacher and the parents both unmindful of the psychological needs of the innocent and the destructive consequences of punishment and fear, use various means to force the child to learn The unemployed youth, finding no way out to earn his livelihood remains on the lookout for a suitable tuition and ultimately finds one or more. The only requirement seems to be that one knows the subject to a certain extent and just imparts that knowledge to the pupils by whatever means one is able to impart it. The teacher teaches in the class in the way he or she had been taught years back or finds fit for that occasion and when he finds himself unable to bring home a certain point to the child he freely uses cane, etc. to make the child understand the point. Similarly, the parents, after sending the child to the school consider themselves free of the responsibilities. They think that the moment the child enters the school, the education becomes the sole responsibility of the teacher. This is true for at least most of the rural schools in India

[illegible]

Undoubtedly the primary teacher is the pivotal instrument in imparting education to the children and the whole education depends upon him. The primary teacher alone can lay foundation to bring those revolutionary improvements in education which the country really needs. At present he is, no doubt, given two years' training but after he leaves the training college and enters the school where he has proved his real worth he finds the schools least equipped with no or very few teaching aids After entering the school the new teacher is invariably enthusiastic about introducing new concepts and methods in the school. But after spending some months in the traditional atmosphere he also becomes one of them. It is because of the fact that by the authorities he is not sufficiently kept informed of the changes or improvements in curriculum, the methods of teaching or evaluation. While the fact is that if we are to improve education on the whole let us first try to reach the primary school teacher who is the only instrument of bringing about improvement on the whole He must know :

- *(a)* What he/she is to achieve at the primary level ?
- *(b)* How he/she is going to achieve it ?
- *(c)* How do we know that he/she has achieved it ?

The parents in India (this is specially true of the whole of rural India), usually believe that once the child is in the class education becomes the sole responsibility of the teacher. And the parent has to contribute the least, if any, except of course, physical requirements of the child are to be looked after by the home. In lieu of this, however, they have a rich tradition of looking after some of the requirements of the guru with full faith in his sincerity and capabilities in guiding the child.

[illegible]

There are three agencies which are basically responsible for the education of the children—the school (teacher), the family (the parents), and the community. As far as the parents' role is concerned it has changed with the changing world. The days are gone when everything was left for the guru to perform. The gurus of those days were free from all kinds of cares and anxieties. They devoted their full time and energy on the education of their pupils. Their needs, according to the requirements of the age, were few. They were happy, contented and satisfied with what they got. But as for their contribution towards education they had a due place in the society. There was no need for them to look towards anything other than what they were doing.

In these conditions it was possible for the parents to throw complete responsibility of the education of their child on the guru. But now the conditions have completely changed both for the teacher, the parents and the society on the whole. With the prosperity and material advancement more anxieties have surrounded us. The theacher has to attend some more social responsibilities in order to maintain him and his family's social status Naturally his attention is not completely fixed on the education of his pupils He has to perform his duties as a teacher with no guidance from any quarter as we have various organizations to look after university and secondary education.

Moreover, our social structure has become more and more complicated now as a result of technological advancements. The teacher being a part and parcel of that complicated social sturcutre he cannot devote his full time and energy to education. It, therefore, becomes necessary for the paernts and the community to share this responsibility of the teacher for the overall benefit of their children. The child is now more exposed to the influences of the community. Hence the parents and the community should present before the young minds such situations as are in keeping with the national objectives and aspirations.

The community in India can be of very effective use in helping the classroom teacher teach some subjects in more effective way than is taught by the teacher through the printed word India is very rich in the community resources specially in the rural areas. But neither the teacher nor the members of the community are conscious of the use of the community resources in providing effective education. Moreover, teaching through community resources provides the most suitable instructional situations where the child does not remain a silent and passive listener but an active participant in the total teaching-learning process.

The Primary School

As is well known the least amount is being spent on primary education and the schools are ill-equipped. Sometimes there is a single-teacher for the whole primary school from Classes I to V with no furniture for the teacher and nothing for the children to sit on, the teacher using the same age-old methods of instruction and evaluation. The rural primary schools tell a very sad story where resides about 85 per cent of our population. There are not even black-bords, what to say of modern teaching aids There are hundreds of schools where the teacher does not know anything of the innovations in teaching and testing is being done in the same age-old fashion. They do not know or are not made to know that the test material can be used as a powerful aid for making teaching more effective and motivating students learning

This is the state of affairs in spite of the knowledge of the educationists and those who are on the helm of affairs that this is the most crucial period in the whole of education and in the life of the child. Nothing is more precious than the growing child in the task of nation-building and that the formative years of the child growth are the most important for the overall development of his personality. This is the period when the foundation of the personality are laid. Habits are formed once for all Qualities, like sincerity, truthfulness, sense of responsibility, sense of duty, awareness of the rights and the duties, love for and dignity of labour, concepts of love or hatred, zealousy, etc. are formed and take root rather firmly during this period.

Whenever we face any problem which has anything to do with the students we always start complaining of our education, our teachers and others. Then we all start sermonizing with the stress on the word 'should' without actually knowing what do we really want from whom and how we are going to solve our problems. In spite of saying, "The teacher should do this", "The politician should do this", it is always better to come forward with some soild, well thought-out plans of action for each one of us, responsible in any way for any aspect of our national life. But we are in the habit of throwing the responsibility on the shoulders of others and make a speech just for the sake of it and are content that perhaps that was all, which we were expected to do.

Need of Real Education

It is, however, a singular fact that the national problems—problems of poverty, law and order (right from eve-teasing, rape and pick-pocketing to agitating against the government and burning the buses and the public buildings), unemployment, indiscipline, lack of values, lack of common sense, lack of the feeling of responsibility, consciousness about the rights and neglect of the duties and so on—can only be solved through education By education I mean the real education which transforms the total personality of the human being bringing out what is the best in

Courtesy Unicef/T S Satyan

him or her and suppressing what is undesirable. Only to teach one to read and write and make him or her only aspire for a white collar job is not education at all. It is literacy and not education. From what we are facing today, i.e the crisis of character, is due to lack of real education. What we have done till now in the field of education is more quantitative than qualitative. We have been following the pattern of education which was primarily meant for preparing clerks to serve the Britishers. That structure has not been basically changed We, therefore, cannot expect too much from that structure.

We have till now wasted quite a time in putting responsibility on others and in just sermonizing It is time that each one of us instead of just discussing things fixes a responsibility of one's own and thinks of the ways and means by which we can make the present system of education more fruitful. This we can do by paying due attention to the early childhood education. In this connection the following steps can be taken :

1. Give top priority and importance to the early school education which till now we are giving to university and secondary education
2. Make the early school education as interesting and attractive for the child as possible so that learning does not remain a burden.
3. Make the parents conscious of their role towards the education of their wards.
4. Raise the social and economic status of the teacher to the extent that he or she devotes completely to the cause of education free from all the mental worries and does not merely remain in search of tuitions to enhance his income
5. Create a sense of respect and importance in the society for the early education so that every unemployed youth does not take to tuition or regular teaching in the teaching shops on a very meagre salary.
6. Impart right type of pre-service training to the teachers so that they develop a real taste for education and do not just consider the profession a source of earning money.
7. Organize in-service orientation courses for giving teachers short-term training in objective of education, content, methodology of teaching, and evaluation.
8. Recruit teachers who have a real love and taste for the profession and do not adopt teaching only under the pressure of unemployment.
9. Recruit teachers (for training and employment) of the right qualification so that they do not consider themselves under-employed and instead of paying attention to the teaching remain always on the look-out for better jobs.
10. Remove the practice of the end-of-the-year examination and take steps to make it an integral part of the total teaching-learning process. □

Education and Society

K.G. RASTOGI
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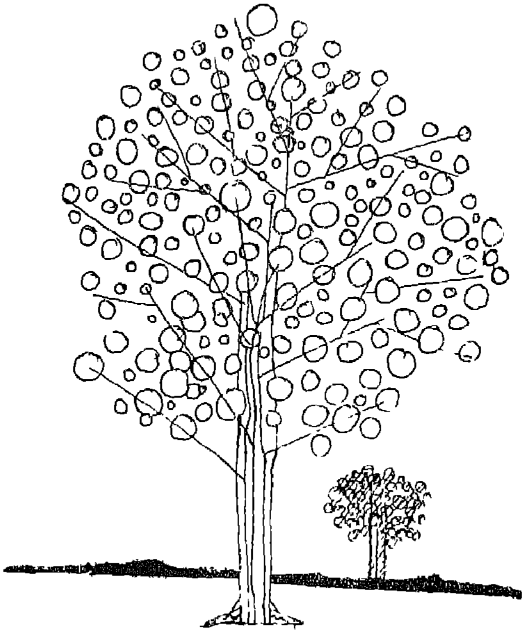
RECENTLY it is being emphasized that education should be such as is helpful in the development of the society. But in our country this demand has not been voiced by the society in a constructive way. Only on certain occasions it has been raised as slogans However, before we discuss the relationship between education and social development, it is necessary to clarify the concept 'Social Development'. Broadly speaking, economic, physical and cultural development are the main aspects of the development. Economic development includes the industrial and the vocational development. Even among these, compared to the vocations related to distribution, the professions related to production are more helpful in the development of a society The knowledge of the environment, science and technology is necessary for the industrial development of a region. The environment is studied with the help of science and technology helps in making it useful for different industries and vocations.

Man and Nature

The physical development includes the development of both man and nature Man and nature are so intimately related with each other that they cannot maintain their health by their mutual ignoring. If the natural environment, i.e. vegetation, bird and animals around us are not healthy, we also cannot enjoy health. If we view the nature only commercially, it may not be ultimately good to us The viewpoint of our previous generations towards nature was healthy and balanced They wanted to maintain the nature But today we want to exhaust the nature at the earliest just to satisfy our selfishness. We have developed a narrow selfish attitude towards



nature. Therefore, nature has affected our life badly as a result of which we are facing natural calamities

Human Relationship

The cultural development of a society is also very important. Its most important aspect is the human relationship. The members of a society cannot be happy even after reaching the peak of the material development, if human relationships are full of tension We can experience this phenomenon in personal, social, professional and political life The spirit of tolerance and appreciation for the ideas and life styles of others is the basis of cultural development of a society.

Education and Social Responsibility

Have we ever thought of the question whether education prevalent in our country is able to fulfil its social responsibility. It is surprising and shocking to note that the society and education are indifferent to each other. There is no relationship between education being given in the educational institution and the local and regional life—economic, social and cultural Till our children get education in schools and colleges, they are not concerned with local industries and vocations But when they are employed, they do not find any relevance of education they received in educational institutions. Usually, we are satisfied with paternal vocations and we feel happy in continuing them generation after generation in a routine way. Have we ever realized that mutual cooperation can help the industrial and vocational development of our region and whether we would like to have that kind of education in our schools and colleges which may help us in realizing the industrial and vocational potential of our area We would like to give to our children such education as may make them capable of utilizing the industrial and vocational potential of the area they live in Usually, it is observed that youths belonging to an undeveloped area leave it for ever and establish somewhere else with the result that the area is deprived of their talent. It is possible that some of us might have promoted the paternal vocation and also have increased the income But we have to see whether our area is developing from the point of view of industries and vocations for which it has the potential, so that it may absorb its talented youth. There are more than one aspects of the industrial development. There are many vocations based on an industry In order to develop one industry the expertise in the raw material, machines, technology, transport, capital, etc is required for which the youth of the area may be trained.

Therefore, it is essential that we study all those things from the regional point of view and whatever knowledge we discover from the study, it should be made a part of education being given to students in that area so that the regional content, the general content, the knowledge of science and the technology may help in the development of the region. In order to achieve this aim active cooperation should be developed between the students and the regional industries and vocations. From this viewpoint the physical development of the region may be viewed. It is essential to know the actual situation to develop the healthy relationship between both man and nature. Keeping this objective in view, education and students should be related with the develodmental efforts being made by the society and the government. The students should not only be aware of the developmental schemes and the duties and responsibilities of the people towards them, but they should be involved in these activities actively. Besides this, there does not seem to be healthy and active give and take between the school and the atmosphere of the society. The atmosphere of schools is so artificial that is has become very different from the social atmosphere and the students perceive the schools in the form of a totally different world from which both the students and the teachers want to run away. Really speaking, education can be useful only if it is related with life. Our ancient Ashramas were best examples in this regard. There life and education were integrated with each other. Local and the regional industries and vocations had an important place in the curriculum followed in Nalanda University.

[illegible]

The relationship between education and society can be understood with the help of the illustrations of three countries : the USA, the USSR and Yugoslavia There is democracy in the USA Every member of the society is free regarding his education and vocation. But the schools and colleges in the USA attach great importance to the needs and the problems of the people. Before starting an institution in an area, the educationists conduct a survery of the needs and the problems of the area and develop the curriculum accordingly. According to that curriculum the building of the institution is constructed and the instructional procedure is adapted.

There is communism in the USSR where the State has full control over affairs The State decides as to how many persons are required for which industry or vocation. According to the need of industry and the vocations, education is planned in the USSR, with the result that every student gets job the next day after he completes his education. The society also develops in the expected direction in a planned way.

Yugoslavia is a country in Europe.

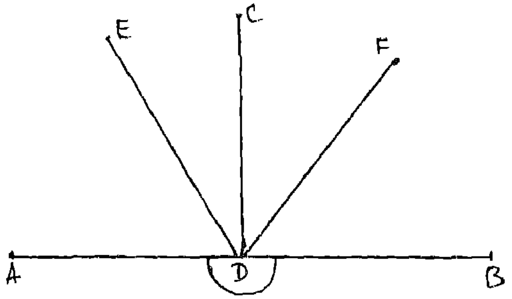
They also have communism But the local society takes all decisions and the State implements them. The General Assembly of the area elects an executive committee and its chairman. The executive committee and the chairman are responsible to the General Assembly. The regional executive committee prepares the total budget for that region and recommends the budget for education and financial, physical and clutural development of the area. The local society takes decisions about the type of education to be given to students from the point of view of expected development of the society. These proposals are approved by the General Assembly and the State then implements them through the executive committee

Thus, we see that the individual needs education and the society needs educated individuals. The definition of education and educated person, besides being irrespective of time and space, is relative to society also. If education and the people are not able to develop the society financially, culturally, materially, it means that education lacks the element of relevance. In order to give education related to society the educational institutions and the society should be actively related Though the educationists can think of certain elements of education independent of time and space, yet for some of the elements they will have to get the direction from the society Therefore, out of the axioms 'education for education', 'education for life' and 'education from life', the last one is the most important. This is possible only when the concept and programmes of education are developed with reference to society. Such education and educational programme will certainly be useful for both the individual and the society. □

TEACHERS WRITE

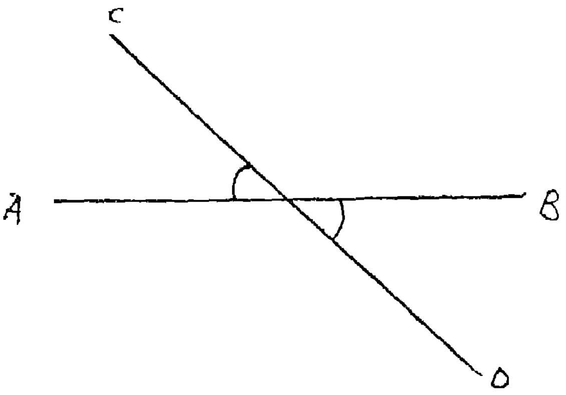
Moral Education through Geometry

Geometrical science is an indivisible subject. Similarly in our contemporary society the moral obligation of education is an outstanding challenge One hopes that the present write-up would inspire future generations of India.



One of the laws of geometry is that the sum of all angles made on a straight line is equal to the total of two right angles. Therefore ∠ (angle) is equal to 180° which means $\angle ADE + CDE + CDF + FDB = 180^\circ$ although among themselves they are not equals. It is interesting to observe that the angle ADB attracts all other angles. In other words ADB holds a commanding yet unobtrusive position Children could be told to emulate ADB.

Swami Vivekanand put across another law before Indians. He used to say that the one who finds faults with others suffers from maximum defects. In other words, finding faults with others leads to the downfall of an individual. We could demonstrate this by the following formula :

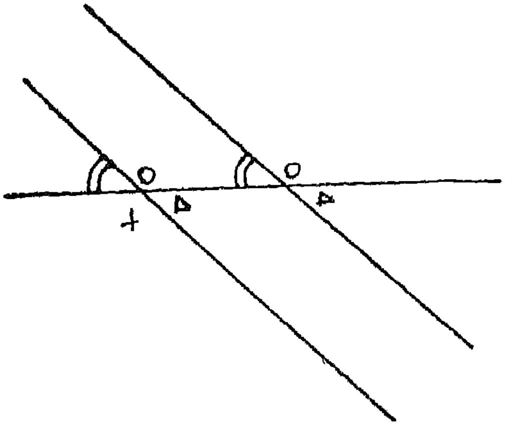


The above illustration shows that the angles facing each other are equal. In other sense if you respect others, others would reciprocate respect. An extraordinary person perceives others equally knowledgeable, rich and perfect as he himself is. Let us decide today that we would stop indulging in the habit of fault-finding. The axiom to support is :

Water the root
To have the fruit.

In conclusion I would say that if one is in good company one acquires goodness It has also been said that it is company which makes the man perfect One should try to realize the goals one has set for oneself and perceive the turth as it exists.

We may draw this in the geometrical manner :



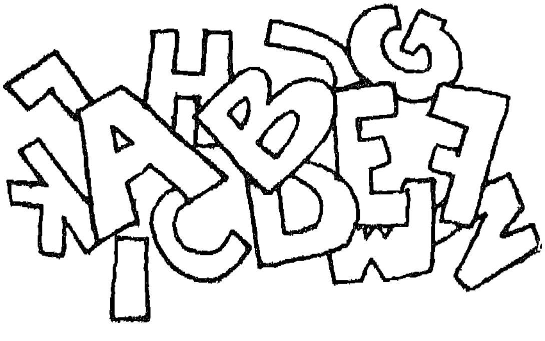
NARAYAN PRASAD BHATT
22, Brahmanpuri, Khandwa, M P.

Why This Indifference toward Drawing ?

DRAWING has a place of its own in the educational world. Drawing of figures helps make a lesson easy, interesting and effective. Just as boiled food acquires a distinctly imporved flavour after frying, even odd drawn lines on the black-board can enliven a lesson a good deal. Instead of a mere black and white film, a lesson becomes as absorbing and pleasing as a coloured film after figures have been drawn to illustrate the content Everyone is aware of the importance of figure drawing, still one is hard put to appreciating this increasing indifference toward drawing in classroom instruction.

It appears as though drawing figures is left only to artists. Very few teachers employ this technique of teaching. Luckily a few teachers of geography and science use drawing as a tool of teaching but rarely does a language teacher do so. Whom to blame for this laziness ? There is hardly a textbook that does not have illustrations. If we don't notice this we have no one else to blame expect ourselves.

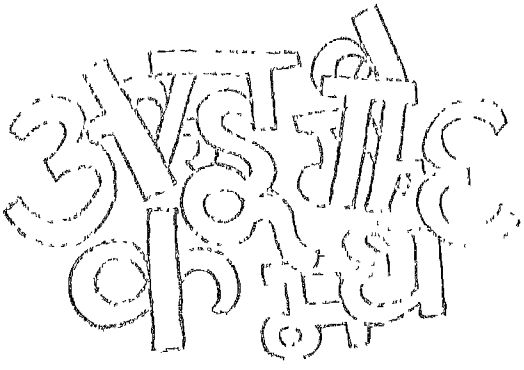
I should like to draw the attention of my colleagues and fellow teachers towards books like *Bada Hindi Aksher Bod* and *Ram Madan Amar* It would be noticed that each alphabet is preceded or accompanied with a coloured drawing. These coloured sketches and drawings, therefore, have



a long history. Each one of us as a child were pleased to see these coloured drawings.

In Bihar English textbooks are also quite well-illustrated. Unfortunately teachers seem to overlook these illustrations. What I found was that because of these illustrations students sense the meaning of their lessons even if they do not follow exactly the import of each word. These illustrations are so well-drawn that each illustration explains one whole lesson. If you too see the same as I do you would agree that drawings enliven and lighten the teaching work.

The same is true of language teaching. In the lower grades illustrations have been used maximally. We would all recall the story of the monkey and the barber or in Hindi, 'Topiwallah'. Each colourful illustration explained a paragraph of the tale and we all relished teaching or learning it.



I would merely ask my friends: Why would they not teach with the help of illustrations and drawings? Why are they interested in keeping teaching so dull and drab? I would like teachers to utilize every occasion to enliven teaching I am sure besides making the teaching interesting, students would remember it too.

DEVENDRA KUMAR SINGH
Headmaster, Primary School, Pipra Vadhmara
Sabor, Distt Bhagalpur, Bihar

[illegible]

MAN BY NATURE is fond of music and art and if he cannot sing himself he can always appreciate good music and recall his favourite songs. The whole idea is that snatches of songs keep on coming back in broken words.

The educational process is a kind of boat which keeps afloat and moving effortlessly. The educational process also makes progress in a similar manner. If the boat is driven against the current the drive becomes slow and the boatman faces difficulties. The same is true of the educational process. The basic law is that adult education should be offered according to the principles of adult psychology. For example, where people sing devotional songs of Tulsidas, Surdas and Kabir these songs should form the basis of teaching adults literacy. If people sing the heroic deeds of Aalah and Udal, or proper Urdu poems the same should form the basis for literacy

In case it is possible to give a tape-recorder each to the instructors, half the battle is already won The instructors could first play these songs or poems and then try teaching alphabets for writing out the same. This would, one hopes, accelerate learning.

[illegible]

Instructors could prepare a chart of devotional songs in the colloquial language After hanging the chart on the black-board start singing in unison with the class and prepare a tape of the same. He may thereafter explain the composition of the song and the words which have made up the song. He may then read slowly until the adults remember the song by heart The adults should be able to sing even if they do not understand the import of the words After the adults have become familiar with the song, the instructor could start teaching alphabets in the song Gradually the adults will pick up the form and shape of the words. A teacher can very cleverly use the sliding board for teaching letters and words. A few points may also be considered

1. A teacher should always pronounce words and not letters.
2. The teacher should not discourage an adult even when he does not speak properly
3. The use of sliding board should not be hurried through.
4. The teacher should teach both the form and shape of each letter.

The use of black-board should also be correct Its improper use can create problems for the adult An adult learner could be asked to draw the shape of the letter on the black-board. The black-board should be used as an instrument of teaching.

Swaroop Purohit
Planning Officer
Sri Ganga Nagar Adult
Education Committee

[illegible]

Volumes after volumes are available written by our eminent educationists on different aspects of education. There is hardly any need to write what others have already written because in most cases except for the juggling of words nothing new is ever said.

The real need lies in offering a system of education to our students which not only prevents them from committing mischief but also helps them work toward contributing their mite for nation building—starting from the family and community to the nation itself. We ought to have a single curriculum for each class for the entire country. Also it must be borne in mind that the purpose of education is not to make one a clerk but learn some trade through real work-experience. The end-products or finished goods of work-experience should be closely supervised by state officials and marketed through a coordinated net-work of regional school stores which cater to the requirements of schools in the area. This would on one hand increase the school revenue and on the other save some expenses. The things that could easily be prepared by children in the age-groups 5 to 11 and 11 to 14 are: chalk-sticks, ink, dusters, carpets, weaving, leather work, colours, etc. All these things should be undertaken to be produced from an early age. After meeting the school requirements these materials could be marketed through the regular distribution system Some senior officers should look after the production, distribution and financial aspects of this scheme.

For excellent production students should be given incentives in the form of praise or money. After the children have passed the basic stage occupational training should be wholly optional. Once people learn to do things the problem of unemployment would vanish This would automatically affect the prevalence of robbery, dacoity, etc. Besides reducing the workload of the police, industrial vocational training would obviate the temptation to copy during examinations. Children would learn to save, work hard and also keep accurate time.

If all schools have the same courses of study, this would lead the birth of common schools—a school where the rich and the poor read side by side. This would be the beginning of a classless society

There should be a uniform pay-scale for all teachers throughout the country. Like all other departments and branches of work teachers should get their pay regularly. The supervisory staff also does not behave properly with the teachers. Apart from the occasional humiliations and low pay, the teachers can hardly, if ever, match with the amenities of life that even the clerks have. The teacher feels harassed.

Teachers should not be expected to do office work. Many a time teachers are asked to do the work of clerks in offices

Schools have often been opened in areas where no facilities exist. Teachers are expected to go to headquarters on their own to bring school supplies that are not made available to them easily.

I suggest these duties should not be given to the teachers

We are all aware of the type of teachers we have Some go to school to take rest, a few work sincerely and while the rest do their jobs perfunctorily. The black sheeps among us have links with the industrialists and others for making easy money This class of teachers bring no credit to the profession Indeed for the self-sacrificing hard-working teachers such teachers are a source of frustration These black sheeps hold on to teaching jobs for earning public respect and also as a cover for their other activities This class of teachers go to school to take rest. No wonder their students also indulge in copying and other malpractices.

What I am saying is that neither our students nor the examination system is to blame The real culprits are these handful bad teachers I suggest the teachers should never be allowed to work in their home-towns or villages Also teachers must get facilities like housing, medical care, etc. as additional incentives to work hard. Care may be taken to find out the background of teachers, their sources of income, conduct, etc. If it is found that a certain preson wants to become teacher only to cover up something, he should not be offered the job at all. If this is not done, things would not improve.

CHANNA SINGH
Science Teacher, Junior High School
Thana Tehsil Block, Garh Mukteshwar
Distt. Ghaziabad, U P.

PRIMARY EDUCATION is the foundation of the edifice of higher learning To enable a child become cultured, good-behaved citizen one should not neglect primary education As we teach books at the primary stage we come across several contradictions and mistakes which obviously leave a bad heritage to children For example, there is a mention in one of the history books that Man makes progress in proportion to the control on his sorrounding environment. This to my mind is an over-emphasis on materialistic possessions. This merely confirms to correctness of what happens around us everyday such as cunningness money-grabbing, etc. Already our society is suffering from the malaise of crime and violence. If we teach these things, we cannot expect children not to approve of the present state of affairs.

Secondly, according to our history books Indian cultural history dates back to the days of Harappa and

Mohen-jo-daro. We have not direct evidence of our cultural heritage beyond that data. In pre-historic times people led a wild life, ate raw meat and had no clothes to put on. But there are books which tell a different tale altogether. For example, Richard Young in his book *Extra-terrestrial Biology* talks of flying living objects which existed a hundred million years back. Even the pre-historic Man is 6,00,000 years old. The second phase of human civilization dates back to some ten thousand years back. Against the light of these facts could we say that the Indian epics like the Ramayana and Mahabharata are true ? Historically these epics are not accepted as true and there is no place to teach the great morals emanating out of them We have space for things which spoil our children but none for these good things.

History books suggest the arrival of the Aryans in 1500 B C. or so The Aryans spread in the Gangetic valley thereafter. They discovered iron-ore and started marking arms This shows clearly that the Mahabharata war took place after the arrival of the Aryans or else one has to say that no iron weapons were used during that war. Also, what happens to the standards of living during that time – the palaces, the cities, the urban amenities, etc

We are placed in an awkward position while trying to state that the heroic deeds of our ancestors as described in these great epics are not correct. Does the phrase 'it is commonly believed' satisfy our curiosity ?

One more mistake occurs in a book on new mathematics. In that book the measures shown are of about a decade back. These weights and measures are no longer in use The same is true of litres. What then is the utility of these measures ? Children are likely to be confused in their day-to-day life Before publishing, these points should have been taken into account, or else if the children get so much confused one need hardly blame them.

SURENDER KUMAR TARUN
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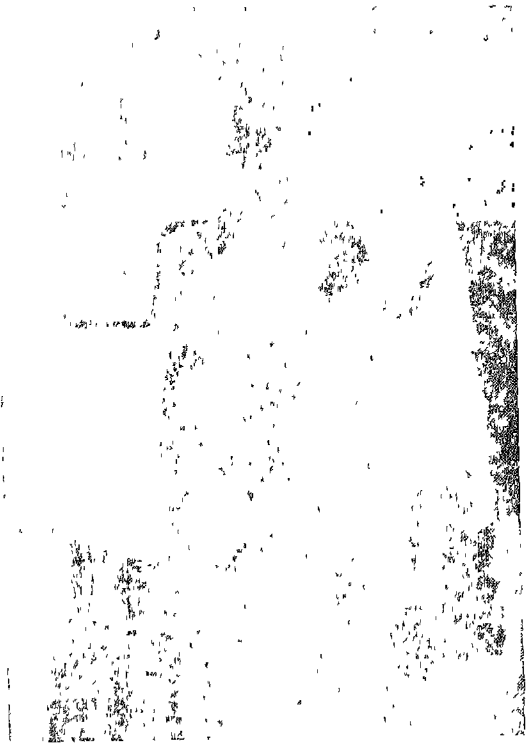
Brave children awarded

On 23 January 1981 a little girl from Bihar became centre of all attention and praise and a focal point for the Press and TV cameramen. Not only this, the Prime Minister of India, Smt Indira Gandhi, was showering all her affection and love on that little girl Kumari Sonia Sinha, an eleven year old student of Class VII of St Joseph Convent, Patna. The Prime Minister was honouring Sonia for showing exemplary courage in saving her younger brother and sister from fire without caring for her own life.

It all happened on 4 April 1980. The cooking gas cylinder in the kitchen house was leaking when her father tried to plug the leakage, the cylinder blew up and in a few minutes the whole house was engulfed in the fire. Sonia was in the bedroom where her younger brother and sister were sleeping. On hearing the loud bang and cries of her parents, Sonia came out and saw the fire spreading to the remaining portion of the house. Her panic-striken mother was looking after her badly burnt father and crying for help. Though Sonia was safe, she thought of her younger brother and sister, who were still asleep. She showed extraordinary presence of mind and jumped into the engulfing flames and brought out safely her brother and sister. In the process she herself got seriously burnt for which she was hospitalized for three months. Sonia recovered but destiny had snatched her beloved father.



PRIME MINISTER, SMT. INDIRA GANDHI, HONOURING SONIA SINHA

The Prime Minister was so moved with Sonia's courage that she made a rare gesture and declared in the prize-giving ceremony that she would bear the entire cost of further treatment and plastic surgery required to remove scars of burn from Sonia's face and hands

Sonia was one of the sixteen little brave children honoured by the Prime Minister who showed exemplary courage in saving the life of others at the risk of their own life These awards were being given for the year 1980. Instituted in 1957 by the Indian Council for Child Welfare (ICCW), these awards are given every year and so far the ICCW has honoured 206 children out of which 44 are girls.

In 1978 the ICCW instituted two special awards in memory of the Chopra children—Geeta and Sanjay—who fought bravely before they were brutally murdered by Ranga and Billa The children are given a citation a medal and lots of toys and presents They also took part in the Republic Day parade.

Other 15 children honoured this year are Master Songu Xun, 12 years (Arunachal Pradesh), who also fought the fire; Master Pampabhai Machhi, 13 years (Gujarat), who saved 27 persons from drowning; Kumari Monika Malhotra, 6 years (Haryana) who got Geeta Chopra Award for saving a child from being kidnapped by a Sadhu; Kamari Arnari Devi, 8 years

THE BRAVE CHILDREN

(Himachal Pradesh) for showing exemplary courage by passing two nights alone in a deep and dense forest when she forgot the way home; Madan Parmar, 15 years (Himachal Pradesh) for saving a drowning man in a turbulent river, Master Shripad Ira Naik, 11 years (Karnataka), who fought a tiger with a stick in the jungle and saved his brother from its jaws; Master Sudhir Reelkar (Maharashtra), who saved three children from a burning hut; Master Vilas Shreedhar Kini, 15 years (Maharashtra), who jumped into a well and saved a little girl from drowning; Master C. Govindan, 14 years (Tamil Nadu), for averting an accident. He saved a blind man from being crushed under the wheels of a lorry; Master K. Perumal, 14 years (Tamil Nadu) for two acts of bravery. He saved a girl and a boy from drowning on two different occasions; Master Satish Kumar Phulsingh, 13 years (Uttar Pradesh) for challenging the armed robbers He woke up the whole village, came back in the darkness, attacked a dacoit and broke his rifle. In the process this brave boy was seriously injured and lost his right eye. He got Sanjay Chopra Award; Kumari Shyama Sharma, 5 years (Uttar Pradesh), who was the youngest child and saved the life of her one year old brother from her burning hut.

Three children from Rampur, Uttar Pradesh, jointly won the bravery award for chasing two armed bandits, raising an alarm and killing them with the help of some villagers They are masters Ram Singh, 13 years, Tena, 10 years and Bhagwant, 14 years. The robbers had looted the passengers of a bullock cart After the dacoits were killed, the property recovered from them was restored to the helpless passengers

—D P SAXENA

Most children can read and write well by the time they are 11, though they seem to be less proficient in simple addition and subtraction, according to confidential reports of two of the biggest surveys ever carried out of primary school pupils, reports David Lister in *The Times Educational Supplement* (25 7.80)

The documents are draft reports of the Government's Assessment of Performance Unit surveys of language performance (the first of its kind) and of mathematics (the second such survey by the unit).

The final versions of these reports have still to be approved and will certainly incorporate some amendments to the drafts considered last week by the APU consultative committee.

On language performance, tests on reading and writing were carried out on 13,850 pupils in 913 schools in England, Wales and Northern Ireland According to the report more than 96 per cent have attained sufficient mastery of writing, spelling and punctuation to make what they write is understood on first reading; and most have a positive attitude to reading, though 80 per cent preferred reading at home alone to reading at school or in a library.

Less encouragingly, however, the report also shows that a third of the sample did not usually read at home and a similar proportion admitted they were simply not interested in books. In addition, 47 per cent of the sample preferred comics to books

What does emerge markedly from the report is the major differences in attitude and achievement between boys and girls. While girls' stronger aptitude for reading has long been known, this study shows that in writing, too, girls are ahead of boys at the age of 11.

Pupils were asked to read and answer questions on stories, poems, lists, schedules and timetables Stories were by far the most popular reading, though as many as 40 per cent of the boys preferred to read about their hobbies, with only half as many girls agreeing Half of the boys preferred comics and annuals but only a third of the girls did so It also emerged that boys with a high mean reading ability score were more likely to read comics and annuals than girls at the same level.

Poetry was generally popular, particularly with pupils of lower than average reading ability

More than half the sample had difficulty in finding suitable books to read, and nearly a third did not enjoy having to look things up in books, though 87 per cent knew how to use a library and nearly as many enjoyed libraries.

More girls preferred long, thick books, while more boys stated a preference for short books and preferred fiction to non-fiction : 29 per cent felt that some of the books used in class were too difficult for them though 63 per cent said they enjoyed reading books that were difficult.

Pupils much preferred talking about books they had read than writing about them, 70 per cent as opposed to 40 per cent. Nearly all the children preferred reading independently than in a group While girls were more positive towards silent independent reading, they were less opposed to reading aloud to an audience. Just under a third of the sample, again more boys than girls, preferred tening to a story to reading it them- lves, and more boys than girls 32 er cent as opposed to 26, lacked nfidence in their capacity to con- ntrate when reading independently.

upils were asked to complete the ntence "The thing I like best about ading is . . ". It emerged that early half read for pleasure and 30 er cent for "self improvement", 12 er cent to fill in time and 11 per cent r independence A quarter of pupils anted more adventure and excite- ent in books, and nearly 10 per cent anted more humour. More than 0 per cent wished that books were eaper

oys tended to dislike subject-matter ey associated with girls such as love ories, and twice the number of girls an boys disliked books which con- ained violence and cruelty

n the tests on writing girls obtained gnificantly higher mean scores than oys (in reading girls obtained only arginally higher scores), and pupils hose first languge was English per- ormed significantly better than pupils ho had English as a second language. n both reading and writing the mean core of puplis in the Midlands was ignificantly lower than that of pupils n other regions and in writing in orthern Ireland it was significantly igher.

here were no significant differences between overall performance in city and rural areas in writing performance Performance in both was worse as the proportion of pupils entitled to free school meals increased, and as pupil-teacher ratios increased.

In the reading tests mean scores of pupils in metropolitan areas were significantly lower than those of pupils in non-metropolitan countries But those differences virtually disappeared when the relative affluence of the catchment areas of schools was taken into account.

It also emerged that mean scores actually decreased as the pupil-teacher ratio decreased. The lowest scores were obtained by puplis in schools with less than 20 pupils a teacher, and the highest in schools with more than 27 pupils a teacher.

In the maths test too, high scores were obtained when there were seemingly unfavourable pupil-teacher ratios.

In the mathematics survey 26 written tests were carried out by 14,000 pupils in England, Wales and Northern Ireland in May last year. The previous APU tests on maths in 1978 did not include Northern Ireland. In addition 1 200 pupils underwent practical tests in which the testers were allowed to prompt the pupils towards the correct strategies in working out the answers.

The report shows that the 11-year-olds have difficulty with arithmetic, particularly decimals When asked to place 0.07, 0 23 and 0 1 in order of size, only 23 per cent got the answer right. Nearly a third of pupils ignored the decimal point and thought the order of size, smallest first, was 0.1, 0.07,0.23. Many pupils, too, failed to add fractions correctly; and half the sample could not subtract 32½ p from £ 1

It emerged from a special questionnaire to 1,250 pupils that nearly two thirds claimed not to have done algebra at all by the time they were 11, and nearly half not to have done geometry.

Less than half the pupils knew what a protractor was when shown one

The report says that while girls lacked self-confidence in mathematics to a greater extent than boys they enjoyed the subject as much and looked forward to the lessons more. There was no great difference in mean scores between the sexes.

The document says that higher scores on the mathematics tests occurred when there were less favourable pupil-teacher ratios

The draft report points to a clear association between the affluence of school catchment areas and pupil performance. Performance of pupils in metropolitan areas is lower than in counties, and again performance in schools in the Midlands lags behind the rest of the country. Performance in Northern Ireland is significantly higher than in England or Wales.

The APU reports involved tests on performance in maintained and independent schools Mr. Peter Kennedy, president of the National Union of Teachers said this week that the fintings of the report on language performance were interesting and encouraging. "With the National Children's Bureau Report it goes to show up the scare stories of the last two years about comprehensives in their true light".

National workshop on educational toy making

A THREE-DAY national workshop on toy-making was held at the NCERT from 19 to 21 February 1981. The workshop was the second phase of the project, national and state level toy-making competition for pre-primary and primary school teachers—1980-81. The Child Study Unit, NCERT sponsored the project as part of the Council's priority programmes for improving the quality of early childhood education initially

during the International Year of the Child. As the response was encouraging and a fair deal of innovations by the teachers came to the fore, it was decided that the programme should be continued.

The project was launched to encourage educational toy-making at the local level with local resources for providing learning experiences to children and further, to motivate teachers to try out their ideas in toy-making and in turn help self-learning among children. Besides, it also provides an opportunity to explore the possibilities of utilization of locally available waste material for providing cheap educational toys. The project was operationalized at phases: first at the state level and later at the national level.

State Level Programme

At the state level, it was carried out by the Field Advisers of the NCERT in areas unde their jurisdiction. For ensuring maximum participation, wider publicity was given through AIR, local newspapers, magazines, etc. The competition was open to teachers teaching up to Classes IV/V.

The state level entries were adjudged by a committee of three judges consisting of the concerned FA and two local judges. Originally, educational value and use of low-cost material were the criteria on which the toys

were evaluated. Besides first and second prizes, four consolation prizes were also awarded. Winners were given cash prizes as well as certificates of merit during the prize awarding-cum-exhibition function organized in the respective states/union territories. Frst prize carried Rs. 200, second prize Rs. 100 and consolation prizes at the rate of Rs. 50 each.

National Level Programme

Thirteen first-prize winners at the state level competitions participated in the three-day national workshop at NCERT. They were : Shilpe Dey (U.P.), U.K. Panda (Orissa), S.M. Faruk Ismail Bhai (Gujarat), S. Balakrishnan (Tamil Nadu), Sunanda G. Kalasekar (Maharashtra), A.K. Sukheja (Delhi), K.N. Shivarama Shetty (Karnataka), R.C. Hirole (M P.), T. Narayanan (Kerala), Sudha Bhardwaj (Chandigarh), K.L. Nirmala Bai (Andhra Pradesh), Chandra Prova Chaudhury (Assam), and P.Y. Prabugaonkar (Goa).

Inaugurating the workshop, Dr. (Smt.) R. Muralidharan, Head, Child Study Unit, traced the significance of the programme. She said that toy was a powerful tool for child to gain progress in various spheres of development especially cognitive and psychomotor developments. She also said that through manipulation of toys child actively participates and interacts with deers and teachers which culminate in the cognitive readiness of the child for better performance at school Since a sizeable number of children in India hail from economically deprived sections of the society, she pointed out that preparation of toys from low-cost and waste materials was very essential.

After the introductory session the participants started preparing their toys independently, based on the guidelines provided by the Child Study Unit. A number of toys were prepared by the participants based on scientific principles. Toys like Multi-subject automatic wheel, Trip-picnic, Our World, puppets, game of figures, Alphabets, etc. have great educational significance. For young children , these are not only toys for play but they also provide opportunities for acquiring concepts like time, distance, number, etc. Besides, they have great significance in language and cognitive, social and emotional developments during early childhood. These can be played both in individual as well as in group sessions. Toys were made from the waste material available in the environment.

The toys were adjudged by a panel of three judges consisting of Mrs. Anjani Dayanand, Mrs. Santha Srinivasan and Dr. (Mrs) R Muralidharan. The judges unanimously awarded first prize to Smt. Sunanda G. Kaleskar, second prize to Shri H C. Hirole, third prize to Shri Faruk Ismail Bhai and consolation prizes to Shri U.K. Panda, Shri S. Balakrishnan and Smt. A. K. Sukheja.

On 21 February, the CSU with the assistance of the participants set up an exhibition of toys in the NCERT. Besides, the toys prepared in the national workshop, entries from state level competitions were also displayed. Pre-primary and primary level teacher-educators and teacher-trainees as well as teachers of Delhi visited the exhibition. A prize distribution function was also held at the NCERT. The chief guest Dr. (Smt.) Kapila Vatsyayan, Joint Educational Adviser, Ministry of Education and Culture, after giving away the prizes pointed out the relevance of toys in the context of early childhood learning. Dr. Vatsyayan elucidiated the various scientific principles related to play and child development. For a child, she said, absence of toys would seriously hamper his progress in learning. In this context, she emphasized the importance of pre-primary education and stressed the urgency for restructuring our education system. ☐

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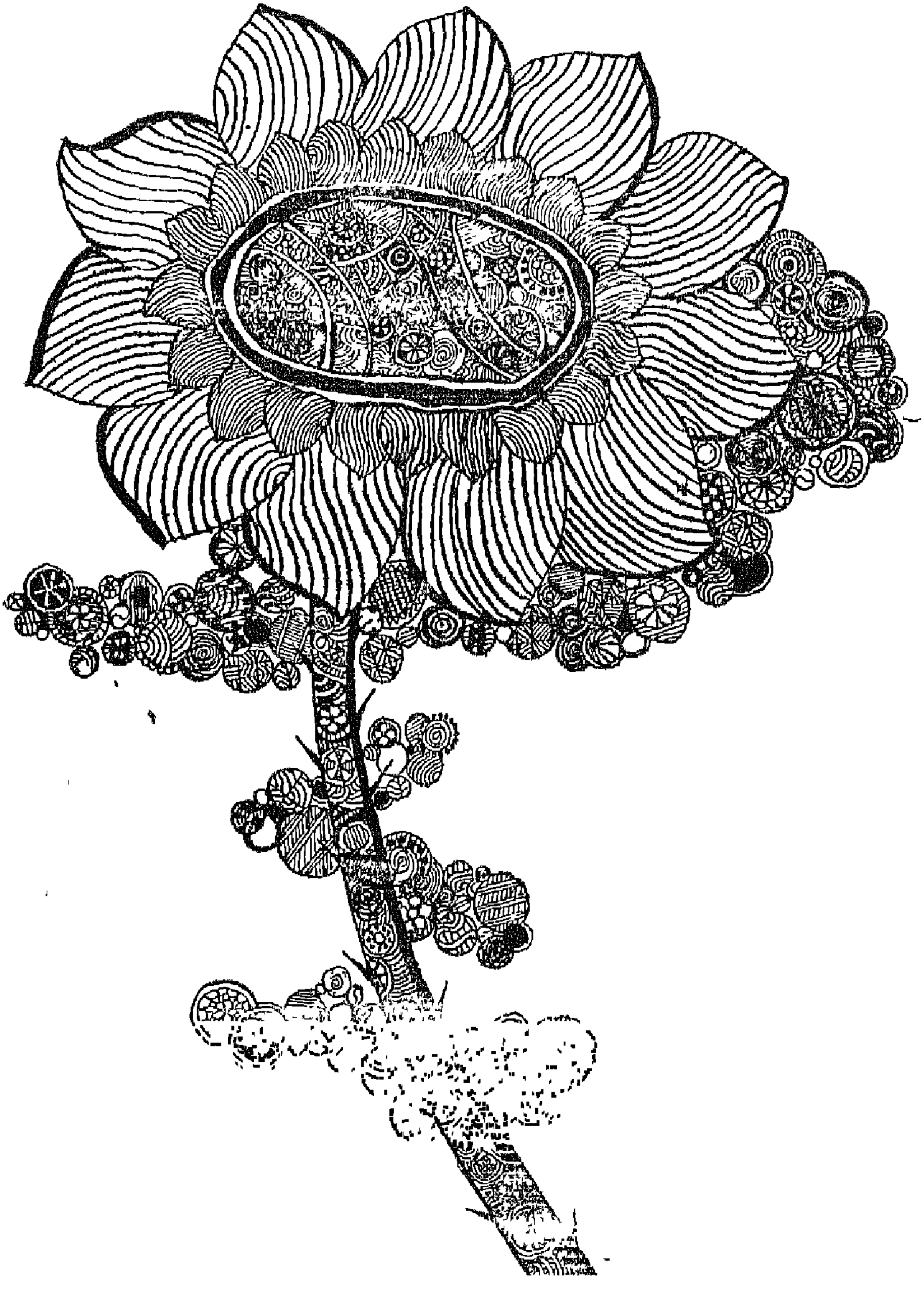

THE PRIMARY TEACHER

Vol. VI No. 3 July 1981

☐ *The Primary Teacher* is a quarterly brought out by the National Council of Educational Research and Training, New Delhi.

The journal intends to give to the practising teachers and concerned administrators authentic information about the educational policies being decided on and pursued at the central level It aims at giving meaningful and relevant material for direct use in the classroom. It would carry announcements of programmes, courses of study, etc., offered at various centres in India from time to time. It also provides a forum for the discussion of contemporary issues in the field of education.

The major features of *The Primary Teacher* are :

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2. Questions and answers
3. States round-up
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Readers' Greater Participation Invited

We invite our readers — the primary teachers — to contribute to this journal profusely. We are interested in pictorial features and illustrated articles written by the practising primary teachers The articles / features, clearly typed out in double space on one side of the paper only, should be sent to the General Editor, *The Primary Teacher*, Journals Cell, NCERT, NIE Campus, Sri Aurobindo Marg, New Delhi 110016.

OLD SCHEMES NEW CHALLENGES

All developing countries are faced with numerous major problems, solutions to which have eluded them so far. Besides economic development and social justice—the twin problems, there are others that dot the scenario. Population control, national integration, moral education in the formal education set-up and universalizing literacy are some of these that get mentioned uniformly at all platforms The question, however, is not whether or not we should continue adding an Australia to our population every year. Similarly, the question is not whether or not we choose to disintegrate or remain illiterate. The question how not to do what we ought not, stares us prominently into our face.

Education being a sub-system of society the obligation to keep one's students at least informed about national problems devolves on the teacher. The teacher, however, can not arrogate to himself the authority to dictate students what to think or do Surely he could keep the dialogue open and present bare facts but taking sides or mixing facts into his own opinions would be going a little too far. The challenge before the teacher is to perform his duty without bias.

We know for certain that teachers hold strong views on each of the national problems. There is also a human tendency to feel convinced of the grounds one imagines would resolve a problem. In a democratic set-up there can be consensus and not dictation. Holding opinions contrary to those of the others does not lead one anywhere. In such cases the declared policies of the government can only help. These policies are based on the courses evolved nationally. One sees no harm if the teacher toes the official line. This is one advice which many a teacher may find it hard to accept. In no case does this absolve the teacher of the moral responsibility to face the national problems squarely or try to deviate from the path chartered for him by a much larger group than himself.

Effective Teaching in Primary Schools

A Strategy

Rajeshwar N Mathur
National Institute of Education
National Council of Educational
Research and Training, New Delhi

UNIVERSALIZATION OF elementary education in the shortest possible time and achievement of functional literacy by the adult and youth population remain the major goals of education in our country. Early achievement of these major goals, enshrined in the Constitution, is vital for the quality of life of the children Universalization could imply providing education to people who have never been to school or have dropped out ; retaining pupils who are already in schools ; elimination of stagnation ; and giving timely and need-based education. Universal literacy requires provision of means and motivation to acquire functional literacy , relevant to socio-economic activities

To achieve the above-mentioned goals, use is made of a network of 6 5 lakh schools and colleges employing over 30 lakh teachers and having an annual budget of Rs. 3000 crore. Enrolment in elementary schools has increased from 223 lakhs in 1950-51 to around 904 lakhs in 1979-80 In 1950, one out of 25 girls, in the age-group 11-13, was enrolled in schools. Twenty years later, the ratio was one to three. However, the number of children who are still to be brought into the ambit of education is 450 lakh, of which 320 lakhs (71%) are girls Over 80% of the children not enrolled in elementary schools are confined to a dozen states which have not yet been able to allocate sufficient resources

There are other socially disadvantaged groups, such as scheduled castes and scheduled tribes (SC/ST), whose children are in the periphery of the school system. About 58% of the

scheduled caste children (40% of the boys and 74% of the girls) and 63% of the scheduled tribe children (48% of the boys and 76% of the girls) are yet to receive elementary education. Thus, the ultimate goal of complete universalization of elementary education does not seem to be very close.

Two recently launched programmes of the Government of India aim to improve the situation further The first programme is the National Adult Education Programme which seeks to bring education, including functional literacy, within the reach of the underprivileged population above the age of 15, mainly the women sections of society. The second programme is that of universalization of elementary education, of which the formal aspect emphasises a more timely and effective delivery of a relevant curriculum together with expansion of facilities, and the non-formal aspect deals with part-time education, particularly for children from weaker sections, girls and children in cottage, small scale and large scale industries.

Several activities have also been taken up to improve the quality of elementary education. Some of them which are aided by the UNICEF, are Science Education Programme, Primary Education Curriculum Renewal, Development Activities in Community Education and Participation, Early Childhood Education and Comprehensive Access to

Primary Education. These activities aim to increase enrolment and retention, develop materials for pre-school and primary school programmes, establish state-level training programmes for educators, and adapt educational inputs for Area Development Programmes.

The Need for a New System

However, the current activities do not appear to lay much emphasis on the development of methods of teaching/instruction appropriate for primary schools. The traditional system of instruction does not appear to be adequate for a large number of primary schools of our country because of the special conditions prevailing there. The Fourth All India Educational Survey reveals that of the 474636 primary schools, 0.62% schools were without teachers, 34.75% schools were single-teacher schools, 27.27% two-teacher schools, 15.10% three-teacher schools, 8.16% four-teacher schools, 5.25% five-teacher schools, and 8.85% schools had more than five teachers. Thus, about 65% of primary schools in our country have two or less teachers. Therefore, if the goal of universalization of elementary education has to be achieved, effective instructional strategies must be evolved for primary schools having inadequate staff and particularly for two-teacher schools. If less than four teachers have to teach five classes, a non-graded system of instruction must be developed.

The Fourth Educational Survey, in addition, reveals that 92.82% of the rural population has been served by primary sections located either in the habitations or up to a walking distance of one kilometer. The existing facilities can, therefore, be better utilised. Over-aged and under-aged children account for around 20% of the enrolment and nearly 54% of the children who are enrolled in Class I drop out by the time they complete Class V. The situation can be improved if viable alternative instructional strategies, which make schooling a rewarding experience and education more pupil-oriented, are made available to the teachers. Individualization of education might help to solve some of these problems. Several studies have shown that individualization results in higher retention and better cognitive growth. Yet other constraints to early universalization of elementary education are socio-economic compulsions in families, particularly in rural areas and among the weaker sections, non-relatedness of the curricular programme to the needs of the real life and the need to earn for some children in urban areas. Also, because of the country's size and diversity, the needs of the learners are diverse and conventional methods are not always relevant. The difficulties of the under-privileged groups, the scheduled castes and the scheduled tribes, women and girls and other weaker groups, especially in rural areas, are markedly severe. A variety of curricula developed to meet the needs of various pupils could help in this respect. In addition, the system of instruction may be individualized to meet the varied needs of the students, especially girls and SC/ST students Thus, individualization could be effective in bringing home the relevance of education This system also provides more interaction among the pupils, and the pupils and the teacher so that the pupils learn from each other's experiences, appreciate and try to solve the problems of deprived pupils. The new system may be self-paced to provide successful learning experiences to slow as well as fast learners This new system may utilise senior/faster students to tutor others as a part of Socially Useful Productive Work (SUPW) If need be and if financial resources allow, tutors may be paid nominal. remuneration Otherwise, they may work a part of their (SUPW) assignment only. Also, the 'bootstrap' system where faster learners of the same class tutor others can be utilised. The teachers may work as a team to deliver the goods as best as they can to improve the quality of education.

[illegible]

The system proposed is, to some extent, formal and utilises the existing school facilities If need be, a non-formal system similar to the one suggested may be developed. Some features of this system can be easily incorporated in such non-formal system. In a nut shell, a new system of education comprising non-graded, self-paced, student-tutored, individualized, and team teaching system could be evolved to meet the needs of primary education in this country

The new system of education is an integration of content and methodology. It aims not only at increasing enrolment in primary schools but also at reducing the drop-out rate. It emphasises need-based education through the individualized system of instruction. The system uses both direct teacher instruction and individual pupil work with the assistance of senior/faster pupils. The senior students tutor as a part of community service which is a component of Socially Useful Productive Work. In addition, individualization helps in more effective student-teacher interaction. Thus, there is more human interaction which makes this system superior to any form of programmed instruction. During the time for individual work, the pupil is allowed to go at his own pace. Self-pacing helps the slower learner to get the satisfaction of comleting a task, using his own way of learning, and also provides a sufficient challenge to the learners. Efforts are made to provide successful and rewarding learning experiences to a very large segment of the student population so that they like to stay in the school and want more schooling.

As two or more teachers are, sometimes, expected to teach five classes, the new system must be non-graded. The students may, for convenience, be divided into two or three learning groups which are taught by the teachers working as a team. Thus, all the teachers together make education relevant and the school as an interesting place for the pupils to come. There is more frequent interaction among teachers which promotes excellence in teaching Details of the broad features of the new system are as follows :

Non-graded System

Broadly speaking, the non-graded system makes possible adjustment of teaching and administrative procedures to meet differing social, mental and physical capacities of pupils. The organization is vertical and eliminates grade labels, promotes flexible grouping and continuous progress, and permits utilization of some meaningful individualized instruction, using student tutors Another purpose of the non-graded system is to provide successful learning experiences to each child so that he will want to learn more in schools If the pupil's learning experiences are not favourable it produces inhibitions and the pupil does not want any more of schooling. Thus by providing successful and rewarding learning experiences the *drop-out rate could be reduced.* Such successful learning experiences are facilitated by providing opportunities for every child to learn according to his own growth pattern. The child is made to realise that he is acquiring skills and abilities which are relevant to his well-being in society. The non-graded system breaks artificial grade barriers and encourages more interaction among the pupils and teachers which in turn helps break caste and other socio-economic barriers in our society. In addition, the non-graded system helps in individualization of instruction which results in better cognitive and effective growth.

Team Teaching System

Although there are many definitions and descriptions of team teaching, for our purpose team teaching may be defined as a system where a group of two or more teachers assumes a common responsibility of the total instruction programme for two or more classes. In the context of two-teacher primary schools, it could mean two teachers sharing responsibilities and expertise to instruct pupils in classes one through five.

Some researches and experiences have shown that grade level grouping in self-contained classrooms for all learning is both inefficient and ineffective. It is also proved that several units can be taught better in large ungraded groups and that a group of teachers working together to share that responsibility of a large group of pupils, can better meet the needs of all pupils. The teachers plan to work together and distribute the tasks according to their interests and expertise They divide the pupils in small groups according to the pupils' abilities and interests. The teachers get more opportunities to interact with the pupils They know the pupils better and, therefore, can give more individualized attention. The team-teaching approach provides more individualization of instruction. In addition, the team teachers organize, more effectively, the faster/senior students to tutor other students. As among the teachers, interaction among the students is also more encouraged.

Individualized System

It is now widely recognized that each individual has different learning needs and rate of growth. Therefore, education should be geared to meet the needs of each individual. In order to sustain his interest in education, a pupil may be allowed to enjoy the process of learning at his own pace. The pupil in the individualized system is given more rewards indicating his success in the learning process. The instant reward changes the outlook of the pupil who begins to like the subject and is motivated to learn more of it The child begins to believe in his own competence and his self-concept develops faster

The individualized system encourages the pupils to take initiative in learning and this self-initiated learning is reinforced by giving the feedback. The new system may not be completely individualized as some pupils, especially those from the lower scocio-economic status, may, at times, need direct teaching to sustain their cognitive growth. However, in order to diagnose different learning difficulties of different pupils the new system may be individualized as much as possible.

Steps for the Development of the New System

The new system requires integration of various aspects of educational processes, from the development of a syllabus to the training of key personnel, evaluation and feedback. Some of the major steps are as follows :

(a) Preparation of a syllabus for

non-graded teaching.

(b) Preparation of textual material and teaching aids based on the syllabus.

(c) Development of teaching and instructional strategies.

(d) Training of teachers/key personnel, etc for the new system.

(e) Try-out of the new system of education.

(f) Evaluation of the new system and feedback.

The try-out of this system may be taken up as a pilot project by professionals who have interest in the improvement of primary education. This group will prepare material and try out the new system in a small number of primary schools. On the other hand, the system may be tried out on a larger scale in a union territory or a part of a state. This will, however, necessitate training of key personnel and teachers, in addition to preparation of materials.

Development of Creative Thinking Abilities at the Primary Stage

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National Council of Educational
Research and Training, New Delhi

IT HAS now been widely recognized that all-round development of the child's personality is the true aim of education This laudable aim can be realized when opportunities are provided to the children to develop various facets of their personality including creative thinking abilities. At the time of birth, the child does not understand his environment and is unaware of a number of phenomena. The child is just like a raw ore of gold and it is up to the goldsmith to convert it into glittering ornaments of choice. Similarly, it is up to the teacher to develop creative thinking abilities in children or to stifle their growth.

What is Creativity

Here a basic question arises : What is meant by creativity ? Creativity has been defined in several ways by different psychologists but there is not much difference between them The common denominator in all definitions is the product of the creative act which is 'Unique', 'Original', 'New' or 'Different' from the one that preceded it For our purpose, we may accept the definition of creativity as "the process by which original patterns are formed and expressed". In a nutshell, creative thinking abilities imply producing acts, ideas, facts, concepts, principles and images in mind creatively or using and producing knowledge creatively Here again, another basic question arises as to who will develop- creative thinking abilities in children at the primary stage. In Indian conditions, the teacher is the only tool available to develop creative thinking abilities in children at the primary stage

In actual practice the child is first dictated by the parents at home and then by the teacher in school. In school, the teacher adopts dictatorial attitude towards the children and behaves with them in an authoritarian manner As a result, the children become so scared that they do not dare ask questions inside or outside the classroom In this way development of the child's mental abilities stops and he becomes dependent on others. These days, in schools, mostly the teachers dictate notes to the students and the students vomit these notes in examination In this way the students are not given a chance to think independently, resulting in their dependence on the teacher. Therefore, their creative thinking abilities do not get nourishment Some psychological research studies have shown that if creative thinking abilities are not allowed to develop during the childhood, they get stunted and cannot develop later in life It is, therefore, very essential to develop creative thinking abilities in the child at the primary stage so that he becomes an independent thinker and develops a capability to produce innovative ideas.

How to develop creativity ?

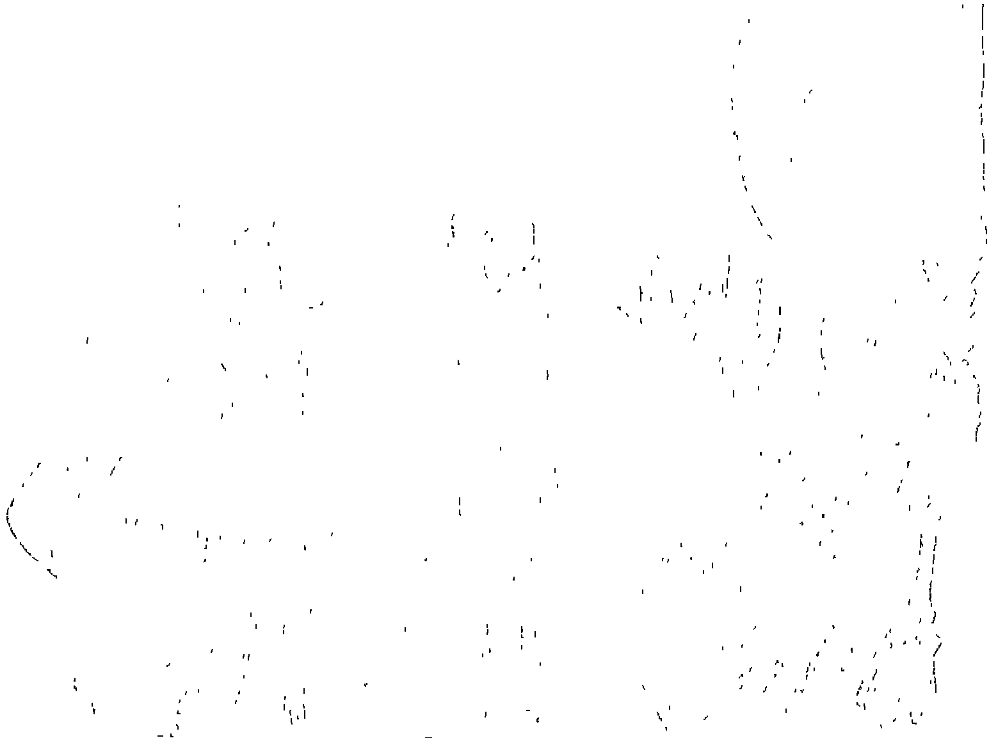
To develop creative thinking abilities in school children, the teacher is the key person because he can put the children in thought-provoking situations and stimulate them to ask intelligent questions. The following techniques may be helpful in the development of creative thinking abilities in the children.

Creative Environment

Environment in its broader sense includes physical, social, and economic environment. But here we are concerned with environment as a method for the development of thinking abilities. Environmental technique is undoubtedly the best technique for the development of creative thinking abilities in the children For example, take the topic of "Flower" or "Tree" from environmental science at the primary stage. After showing the trees and plants in the school compoud the teacher can stimulate the students to put questions In this way they can learn better in comparison to the teaching of the lesson in the classroom in a routine manner. Thus, a teacher can stimulate the children to think independently and creatively with the help of environment.

Creative Art

Art is the best means to develop creative thinking abilities in the children at the primary stage Art includes various activities, i e., dance, role



playing, drama, painting, clay modelling, sculpture, etc The teacher can stimulate the children to organize folk dances and answer the usual questions pertaining to them In the same way, he can ask the students to prepare different types of clay models and stimulate them to raise as many questions as they can regarding each of the models. The child knows the role of different persons like postman, policeman, parents and also of birds and animals from his surroundings The teacher can stimulate the children to play the roles of artists, parents, policemen and birds in the class. The child can present mono-acting in the class. In this way, art can help the teacher to develop thinking abilities in the children

Scientific Method

The teacher should adopt a scientific method of teaching, which has the following steps :

(i) Confrontation with a problematic situation

(ii) Classification of the problem and formulation of hypotheses.

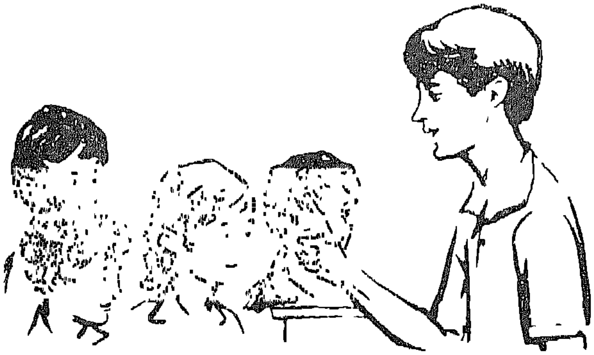
(iii) Collection of data, analysing the data and testing the hypotheses

(iv) Drawing conclusions and making generalizations.

On the basis of the systematic way of teaching mentioned above, the teacher can develop thinking abilities in the children. At the primary stage, if such abilities are developed, the children will become habitual of doing things finding in a systematic way and out solutions and making generalizations The teacher can use this method in subjects like mathematics, science, and environmental studies, etc

Creative Reading

Readers are generally of six types. The readers of the first type read books, newspapers, articles and stories, etc., but they do not understand what they have read The readers of the second type read literature and are able to understand but they can not explain what they have read The third type reads and mugs up literature and vomits it out as and when asked The fourth type of readers read and understand literature and keep the information as a record The fifth type of readers are able to analyse and criticise the ideas given in the literature The sixth type of readers are creative readers. They understand the literature and point out the lacunae and shortcomings, and give suggestions for modifications They go even beyond this stage and can produce innovative ideas on the basis of the piece of literature they have gone through The teacher should make efforts to produce creative readers. While teaching he can put thought-provoking questions which



will require imaginative thinking on the part of the pupils. The teacher can give them a paragraph of prose, an advertisement, an article or a speech for finding out a suitable title.

Creative Writing

In creative writing, words employed and ideas expressed are unique in their own way and the writer can opt for any stream of writing, poetry, lyric, story, drama, essay or letter-writing as his medium of expression. Through these media, the child can enjoy the past, the present and the future simultaneously, and can experience the worlds of reality and imagination instantaneously The teacher can develop the skill of creative writing in the class by involving the children in different activities in accordance with their interests. Their grammatical and spelling mistakes should be corrected but correlation of mistakes should not be over-emphasized because ideas and styles deserve more attention and emphasis. In the class, every new object or idea should be given importance and investigation and exploration should be encouraged so that self-confidence is developed in the children. The teacher should encourage the desire for self-expression, and should provide the children with opportunities for writing essays, stories, letters, poems, etc , without restrictions of time

Creative Oral Expression

It is generally observed that many people are unable to express themselves satisfactorily. There must be more than one reason for this problem But the most important reason is that during the first few years of their life, the children do not get adequate opportunities for oral self-expression. Only the teacher can help in solving this problem. He can involve the children in many activities like school parliament, daily morning assembly, additional reading for acquisition of knowledge, modern methods and techniques of teaching, co-curricular activities, brain storming and creative teaching, for the improvement of their oral expression.

These are thus a few suggestions for the development of creative thinking abilities in the children at the primary stage. A teacher may think of several other ways of developing creative thinking abilities and help the child in shaping gradually his total development

Importance of Music in Elementary Education

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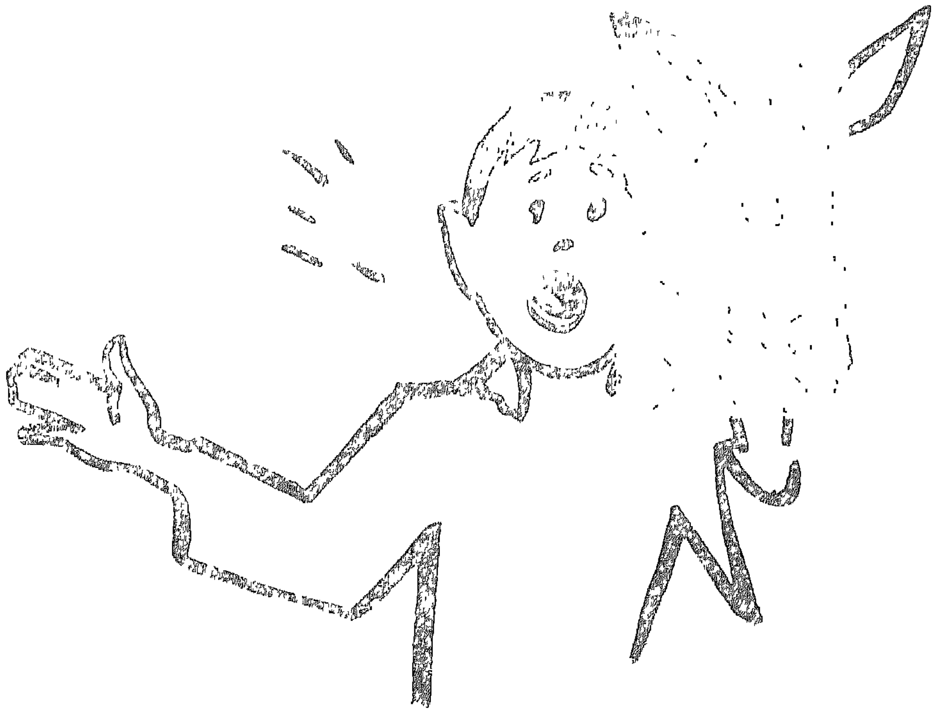
MUSIC IS the essence of human life. It is such a gift that involves man so deeply that he forgets even himself for sometime. Music is all the more important for little children. It is a research-tested fact that children love music immensely. They love music as dearly as they love sweets and toys. Even their games are usually based on musical tones and musical sweetness and repetition, as 'Hara Smundar Gopi Chander——,' etc. Even at the time of going to bed, little children are made to listen to slow and sweet sounding melodies and lullabies. All this goes to show that music is certainly of great consequence in the education of primary school children. Yet the fact remains that music finds many difficulties to make a place for itself in primary schools. Even today, there are many people who do not wish to give a proper place to music in the school curriculum That is why only a few progressive schools make it an integral part of their curriculum

The capacity and melody of music do not merely depend upon the sweetness of one's voice. It is almost a misnomer to identify sweetness of music with the sweetness of one's throat. The capacity of music is manifest in a variety of forces One is love for music which creates a kind of interest for music This is visible in an individual who seeks to evolve his personality through the medium of music. In simple words, it is through music that one becomes completely one and involved in it.

This becomes clear at times through expressions like tears of joy, wondering eyes, etc.



It is very important from the viewpoint of teaching that the teacher should try, according to his capacity, to instil in his students love for music. The more the students are impressed by the teacher's own love for music, the more they develop interest in this field. Besides love for music, practice in music is another important criterion This is inherent almost in everyone and needs to be urgently developed. Generally, most children can instantly copy one or two notes sung by the teacher. But all cannot reflect them instantly in their mind merely on listening to them. It is not sure that, even on having love for music, one may express it in its true tone, melody and spirit. All this needs a sufficient amount of practice, particularly in two of its important aspects, that is, in preparing oneself to sing on listening to it and to attune oneself to its true tone and melody.

It is important for the teacher to select, in the beginning, only such songs that may be easy and simple, and to pick up only such students to sing them as possess good memory to learn songs Besides love for music and memory for musical notes, it is important to inculcate in the child musical proficiency. This includes providing knowledge of fall and rise in voice, its sweetness and shrillness, etc. But this may not be easy. However, in order to inculcate these traits, the teacher ought to keep the following points in mind :

1 The words of a song should be easy and known; they should be sweet in tone ; their meaning should be simple and clear.

2. The subject-matter of the song should be in accordance with the understanding level of the class Generally, children like those songs that enshrine patriotism, heroism etc , and that involve the use of names of birds, animals, toys, etc,

3. Children like group songs more than individual songs and, as such, they are of greater consequence

4. The songs ought to be sweet-sounding and melodious. It is therefore, important to select activity songs which are easier to sing and easier to be expressed through hand and footwork and other bodier actions and activities. This enhances self-confidence among children.

5. It is true that the number of activity songs is not enough from the point of view of children. To meet this need, the teacher may himself learn to compose children songs. It may be difficult in the beginning but slowly and gradually the teacher would be a success in this task.

6. The teacher should himself compose and select songs on the basis of his own insight. These may be composed on the basis of classroom lessons as well. The teacher can always make the child interested by presenting newer and newer songs before them.

7. The teacher should also evaluate the interest of children from time to time in the light of newer techniques and newer insights.

In short, if we wish to become successful primary school teachers, we ought to become one among children and be practical and pragmatic in our teaching Very few teachers in India possess true knowledge of teaching music to little children. Because of lack of this knowledge, they fail to become one with children and, as such, both teacher as well as the children remain deprived of the real joy of music. Hence, the importance of music in the education of primary school children .

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Putting Questions in the Classroom

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QUESTIONS form one of the most patent tools of classroom instruction. They are used for a variety of purposes Questions are used in the classroom to arouse pupils' curiosity and stimulate their thinking Questions are also used for reviewing pupils' progress in learning. Yet another purpose for which questions are used refers to securing and sustaining pupils' attention in the classroom. Above all, questions increase pupils' participation in the learning situation which is an essential condition of learning.

Classroom questioning has several dimensions Putting questions and calling on pupils are two of these. What are the specific teacher behaviours comprising these dimensions ? The answer to this question provides guidelines for the teacher to put questions in the classroom and distribute them in an effective manner. Discussion on these two aspects of classroom questioning behaviour follows.

Methodology of Putting Classroom Questions

A question is first phrased in the mind of the teacher, followed by asking students' reactions to it in the classroom. The specific teacher's behaviour for putting cross-questions in the classroom refers to speed and voice.

Speed

The speed with which questions are put in the classroom determines their comprehensibility. Different types of questions need to be put with different speeds to different types of pupils. The longer questions need to be put at slower speed than the shorter questions Questions may be put at slower speed in lower grades in view of the maturity level of the pupils The questions aimed at stimulating thinking in pupils need to be put at comparatively slower speed than drill and practice questions. *Thus, the speed of putting questions in the classroom should be adjusted according to the purpose of the question, and the level of the pupils.*

Modulated Voice

Modulation of voice includes tone and pitch. Questions should be put with proper modulation, because the tone and, the pitch of, and stress on different words determine the intent of the question. For example . What brings you here ?

The question in normal tone and pitch conveys simple inquiry about the purpose of the visit. The high tone and pitch of, and stress on the first two words change the intent. It questions the desirability of the visit.

Audibility of Questions

Questions need to be put in a voice which is audible to the pupils sitting in different parts of the classroom. Sometimes questions go unanswered not because the pupils do not know the answer, but because they could not hear the questions properly. So audibility of the questions by all the pupils should be ensured.

Pausing

After putting a question, the teacher is to call on some pupil to answer. He should allow some pause which is a short period of silence for providing the pupils with time to think The length of the pause depends upon the nature of the question and the level of the pupils. The questions requiring a higher level of thinking need a longer pause than the questions requiring a lower level of thinking.

The pupils in lower grades need a longer pause than those in higher grades. Usually, a pause varies from 3-5 seconds depending upon the level of the question and the level of the pupils

Distribution of Questions

After putting the question and providing an adequate pause for the pupils to think out their responses, the teacher is required to designate pupils to answer, the question. What are the dimensions of distribution of classroom questions ? What are the specific teacher behaviours ? This section specifies the teacher's behaviour corresponding to the dimensions of distribution of questions in the classroom.

Coverage of Classroom Space

The first dimension of distribution of questions refers to the coverage of classroom Are the questions distributed among the pupils sitting in front of the teacher or among the pupils at the back of the classroom ? Are they distributed among the pupils on the left of the classroom or among those on the right segment of the classroom ? It has been observed that distribution is mostly confined to the pupils sitting in the front It it, therefore, essential that questions are distributed all over the classroom.

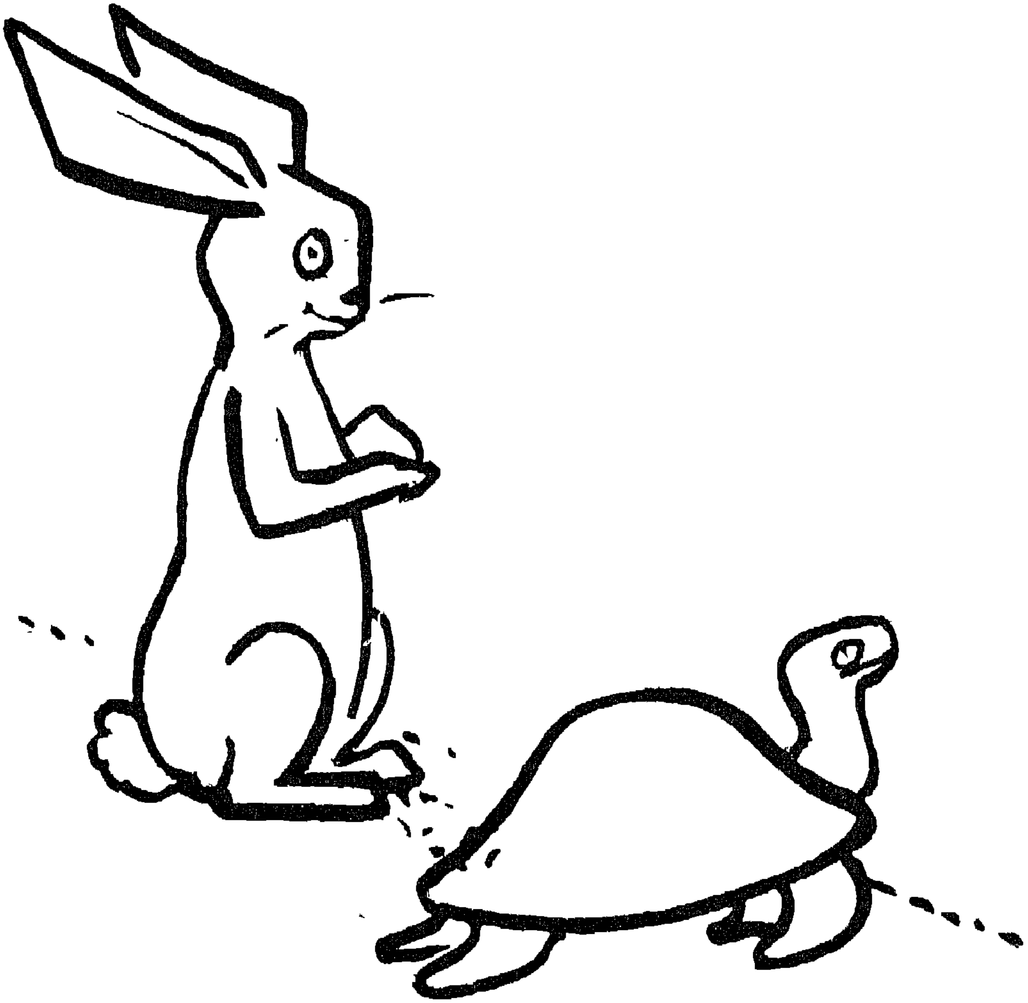
Calling on Non-volunteers and Volunteers

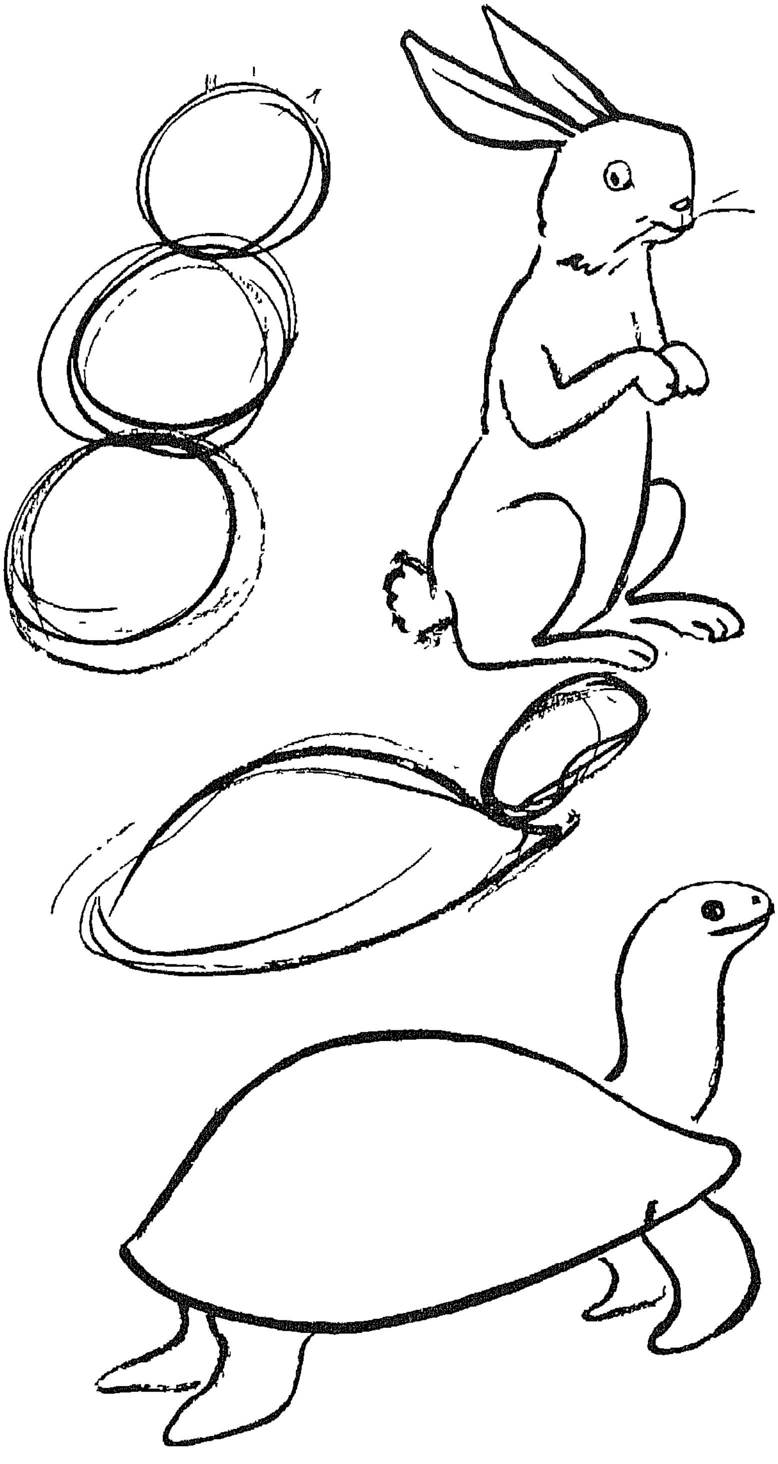
The second dimension of distribution of classroom questions refers to the nature of pupils Is it that the teacher calls on volunteers only to answer his questions or does he call on non-volunteers as well ? A volunteer is one who shows willingness to answer a question by raising his hand or by other behavioural indicators. A non-volunteer is one who chooses to remain passive to the questions. The practice, however, is that usually the teacher calls on volunteers to answer his questions. This is an unhealthy classroom practice The non-volunteers withdraw themselves from all classroom activities. They become underachievers and are converted into failures. They finally become potential drop-outs So, the teacher calling on non-volunteers assumes the same importance, rather increased importance, than calling on volunteers only. This helps in stimulating these pupils and enlisting their participation in classroom instruction

Thus, the teacher should put questions in the classroom, ensuring (a) proper speed; (b) properly modulated voice; (c) audibility; and (d) adequate pause. The questions should be distributed all over the classroom, among volunteers as well as non-volunteers.

The Hare and the Tortoise

Note for Teachers Please relate this tale in the class and help the children draw both the hare and the tortoise in different stages of the race Please insist on drawing separate lines of the anatomy of both and explain how easy it is to draw animals





The age-old story of the hare and the tortoise explains very little. The real tale is certainly more fascinating.

Once upon a time in a dense forest a tortoise boasted of his speed. The hare listened patiently and smiled. He was, however, not sure about the reason of this big talk

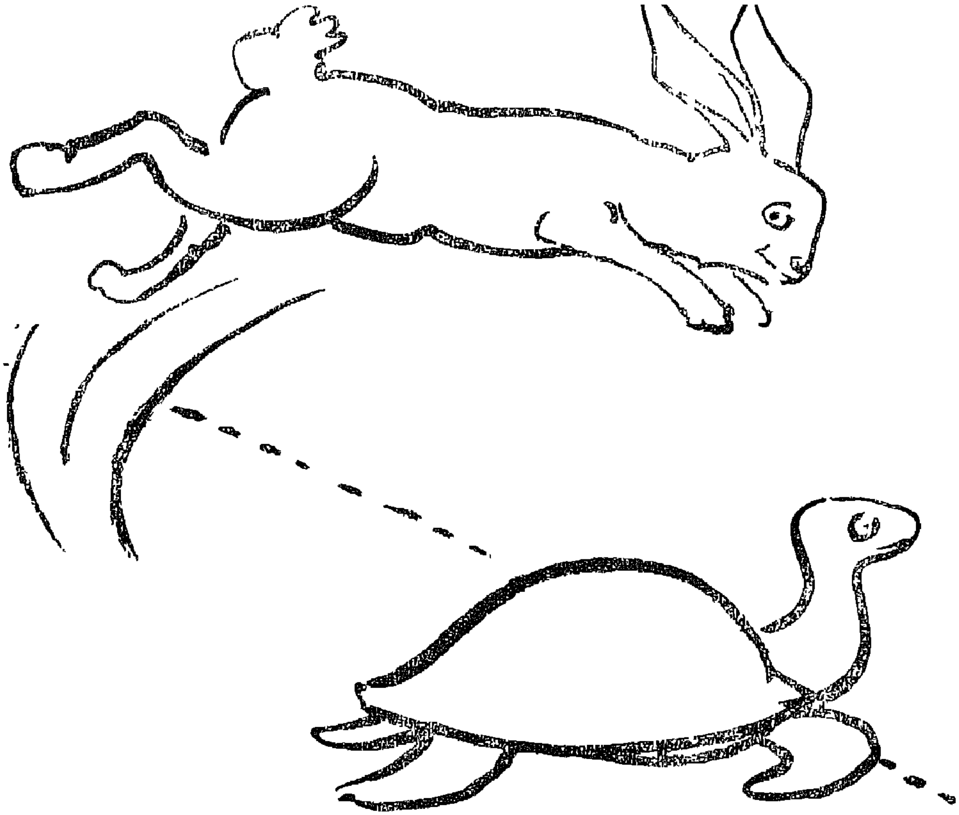
The tortoise mistook the silence for cowardice on the part of the hare. “Would you care to run against me now ?” cried the tortoise.

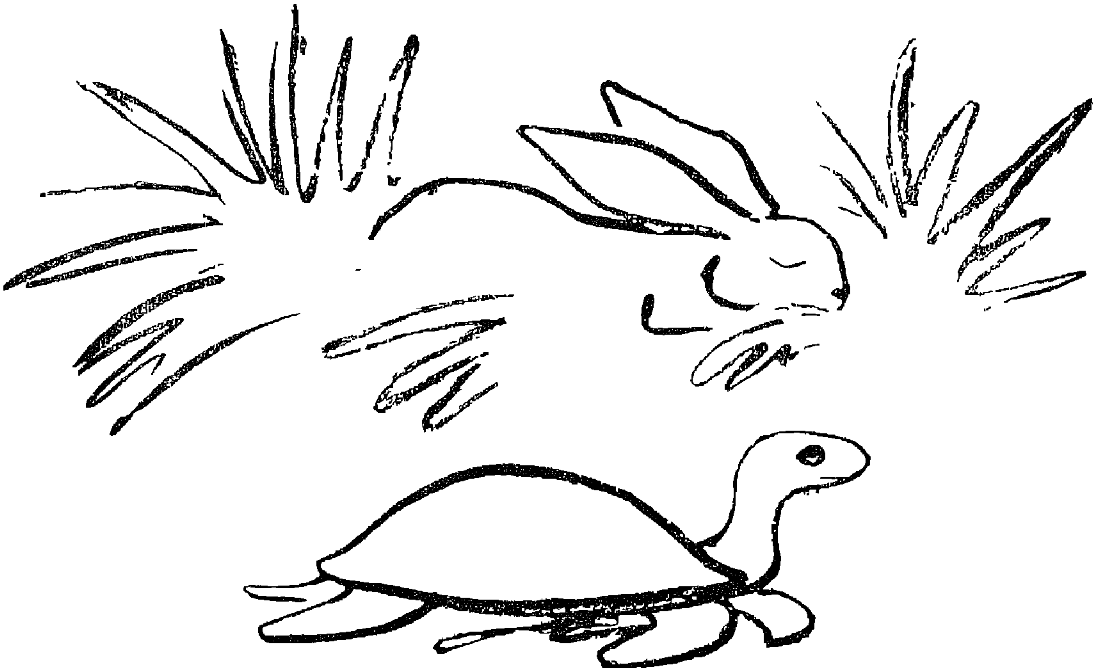
“If you insist, yes”, agreed the hare.

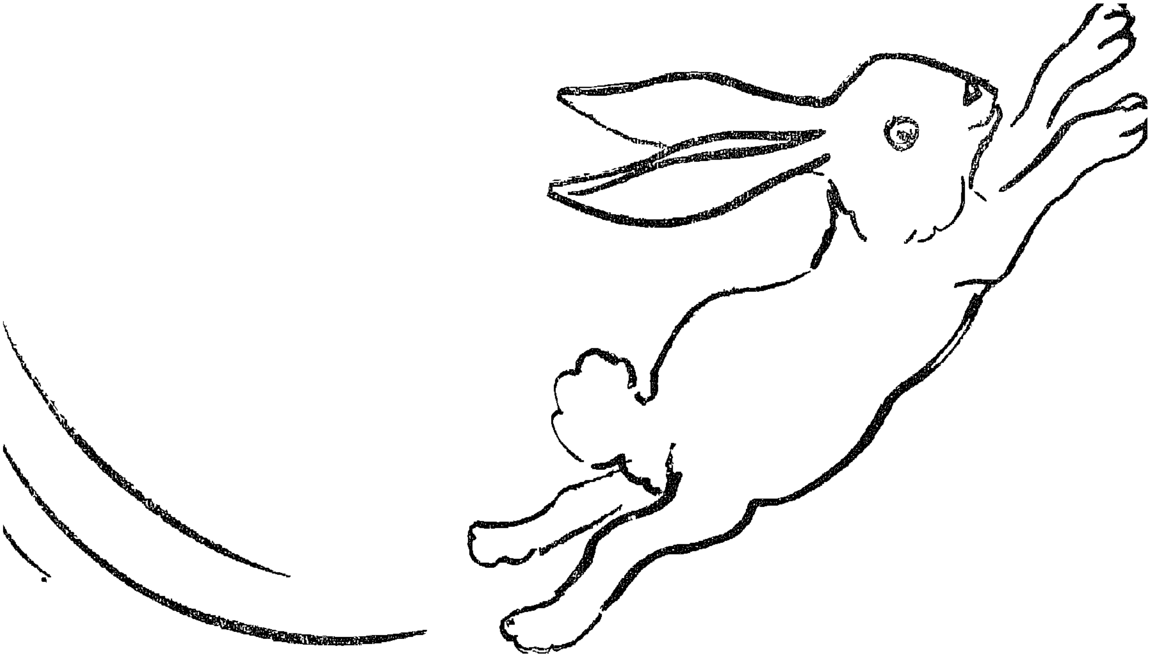
As the race started, the hare went to take rest. Determined as the tortoise was, he did'nt look back.

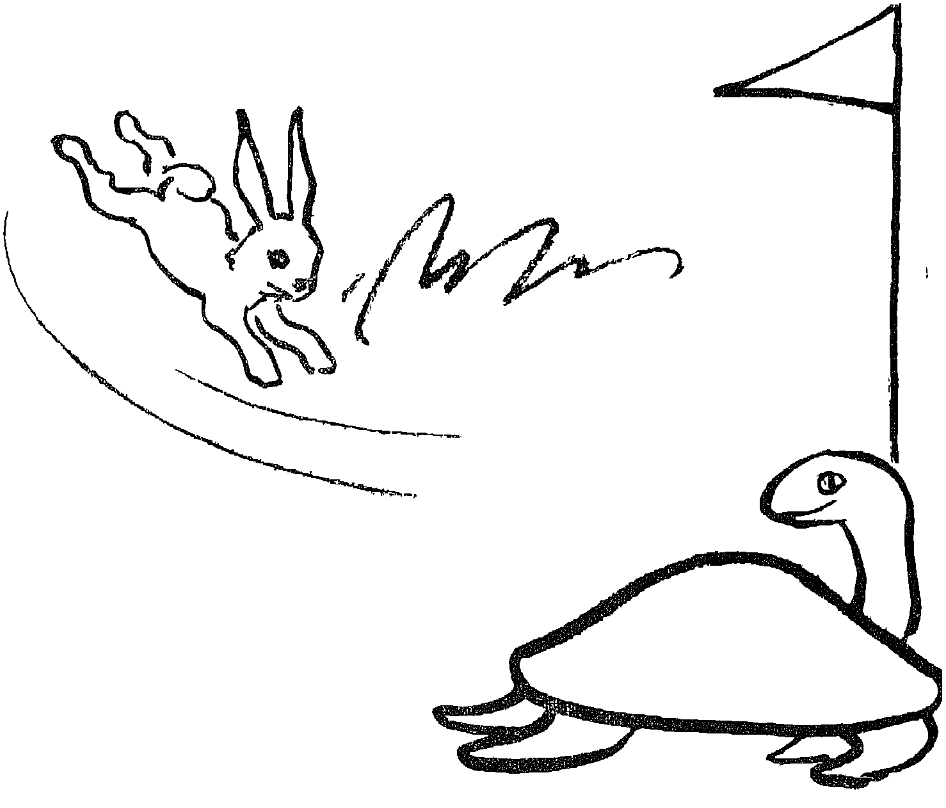
After sometime, the hare woke up and overtook the tortoise. “I have no interest in competing with you,” the hare shouted. If I win, I get no credit, but If you win the whole world would acknowledge you as a wise and patient person Even at the cost of my reputation, I shall not win ”

The moral of the story is : Never hurt anybody's ego if you can help it.









Shape and its Importance

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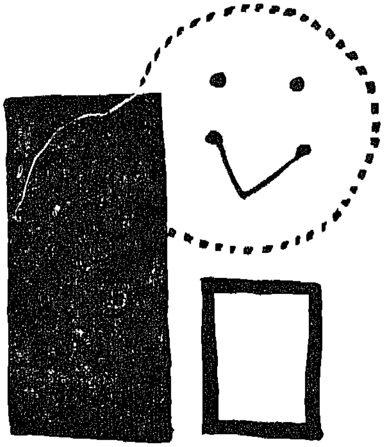
THE AREA of art is not restricted to drawings only, it extends to expression of one's ideas and feelings besides aesthetics. Art has its own importance in one's daily life. Happiness, depression, etc., can be expressed through art They can be portrayed through varying shapes. While faith can be symbolized in the form of temples, gurudwaras and mosques, depression could be shown through jail. God is beyond form but He is symbolized in varying forms for the benefit of ordinary mortals.

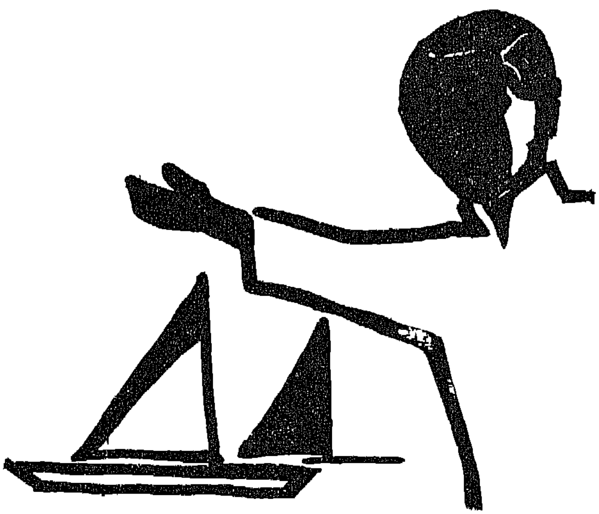
While trees, mountains and rivers are gifts of nature, paintings, art, furniture, etc. are man-made

In nature, no two trees or mountains or stones are exactly alike. This feeling of being different renders these shapes into a sense of beauty The artist presents them in new shapes and forms but their relationship with nature is evident. In certain cases the artist completes the job left incomplete by nature. A modern artist, Sagan, has classified all shapes into three main categories They are · (a) perpendicular, (b) circular and (c) angular. All art has these three forms as its basis All forms have some relationship with empty space. This vacant space and the relationship between the art form and the vacant space gives birth to aesthetics

Creativity in art is of immense importance. An artist recreates flowers, leaves, etc , through his imagination. Only then can one feel the mystery, beauty and depth in an art form Art should leave something for the imagination of the viewer.

If several forms were presented in a single type, it would normally result in boredom. Therefore, different forms should be arranged in different vacant spaces so that art should look even betterthan what it would normally look. Therein lies the distinction between an artist and a designer.





A better art is one which is better organized While preparing a painting an artist should remember not to have all subjects of one size only. Except for the principal form which normally is the theme, all others should be smaller and supporting. There should be a colour combination in the forms but the background should be given another colour in order to bring out the theme prominently. Bright colours bring the shapes and forms out The reason why Rajput paintings have been admired is that the background is flat but the forms and shapes have been done well. The king is shown more prominently than the servant All other men and women are of one size only. The balcony, trees and other objects are in an irregular design.

Geometrical Figures

Folk art is a wider term. Like ordinary people, it is free from rules. Lines are simple and colours are pure. Folk art is meant to please oneself. It has the child-like simplicity that attracts everyone. Its geometrical forms are employed to decorate homes and are used in the red colours like *aata* and *mehndi*. On all auspicious occasions, geometrical shapes and forms are used. On occasions like Holi, Deewali, etc., the house is decorated with these designs. These designs have been invented to please oneself. Meanings to these irregular lines were given later. The Swastik term has been traced back to Mohn-Jo-Daro. This term is made up of the two symbols of Man and Nature. It is regarded very auspicious. In ancient Egypt angles were used as a unit of measure Similarly, in *Tantra*, angles have profusely been used. Swastik is painted on the walls during Dussehra and Deewali. The hexagons are used in the

Mahalaxmi Yantra. Besides the old fort at Delhi, hexagons can be found on the tombs of Humayun and Muhammad Gazni. This form is used in Mesopotamia, Babylon and Bhutan.

In hexagon a chemist sees the constituents of his experiment and a *tantrik* the background for his yoga.

In nature this shape is found in the honeycomb, the back of the tortoise, the diamond, etc. This shape can withstand the gravity of the earth and the magnetic pulls. The angular form provides strength to the thing built in that shape. Minarets, doors, bridges, etc., are all built in that shape. Mountains are represented in angular forms. Mountains and Shiva are interrelated. In the physical world the angle represents manliness, and the three basic qualities of *Sat*, *Tam* and *Raj* which in turn are representative of Brahma, Vishnu and Mahesh The trinity of the Christians is also symbolized by the angle The geometric forms used in art can be employed for material and spiritual purposes Different forms do not mean that the purposes are also different.

Ornamentation

Geometrical forms started getting ornamented soon after. We all know that ornamentation is not an end in itself. It is employed to make a beautiful thing look more beautiful but it cannot make ugly beautiful. In any art form we have two aspects of a thing, the conceptual and the artistic. Ornamentation helps the former look more charming and, therefore, too much of it would subdue the concept. Art, unlike photography, is not a copy of nature. In Ajanta, creepers and leaves have been ornamentally portrayed. Ornamentation can be seen both in fine art and also in objects of daily use. The tombs of Egypt, the Greece wine-glasses, the pillars in Indian temples, the arches and shades etc , are all ornamented. With time the values of ornamentation also undergo change The Lotus of Ajanta was replaced by the rose of the Mughals Creepers and flowers formerly used only on temple walls found place in the Mughal residential apartments Under the influence of *Tantra*, the idols of Konark, Khajuraho and Bhubaneswar went nude.

The primitive man always took shelter in buildings and caves. After he had eaten and rested, he started ornamenting these places. He ornamented natives' equipments and developed a keen sense for a philosophy of art and aesthetics. The 'art for art's sake' could only accept a few developments in art which Vatsayan had classified. The ornamentation of idols falls within this category. The dancing girls beneath the arches provide support to the doormen on the roof. Most of Ajanta Art is also decorative. The tree on a drama stage is also decorative.

The Symbol and Reality

There is a saying in art which holds that art should be like a reflection in the mirror of reality. This is what had fooled Duryodhana while visiting the newly-constructed house of the Pandavas. If one went a little ahead of this, one would have to use symbols. It is with the help of symbols we come to recognize the culture of other nations In the Indian culture, the lotus, the elephant and the swan have their own connotations All the three have relation with water. These symbols also represent the Hindu pantheon.

The lotus has been used profusely by the Buddhists. It symbolizes Lord Buddha's unlimited purity, inner calm and divinity. In those times the lotus was employed to show a woman's beauty—her eyes, face, palm and feet were compared with the lotus.

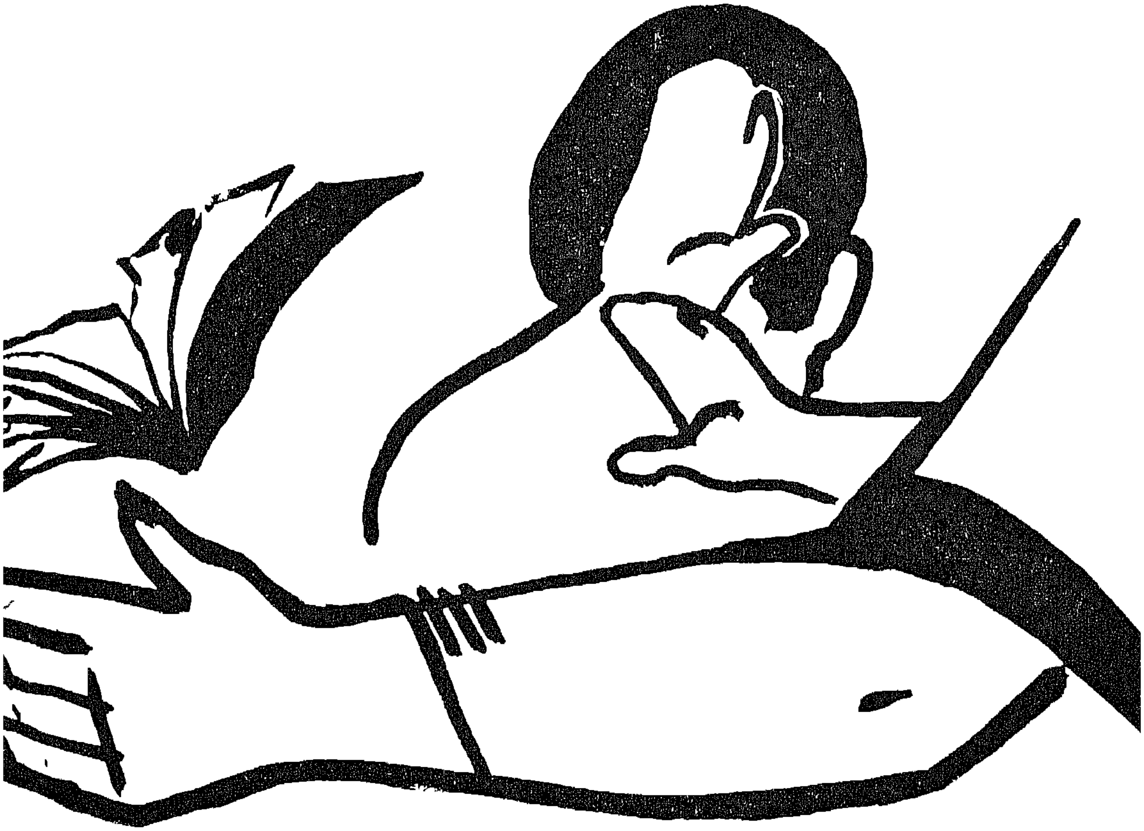
The elephant signified power, peace and kingliness. The elephant has been employed in battles, marriages, etc., and is on the whole very auspicious. It is Lord Indra's representative and is counted as *one* out of the fourteen gems. Even Lord Buddha was in his previous life, an elephant, it is said

The Swan

The swan is supposed to be the carrier of Lord Brahma and the Goddess of Learning. It represents purity, intelligence, peace and touching affection The Jains and the Mauryas have used the lotus in their art and architecture

We could briefly state that whether 'art for art's sake' is a serious matter or not, aesthetics satisfies our intellectual need. Painting gives us pleasure in being looked at. Why don't we, then, beautify and artistically produce objects of daily use ?

TEACHERS WRITE



Punishment in Schools

A Boon or A Curse

PUNISHMENT has become a controversial issue in Indian schools In most of the schools in India, students often get punishment which becomes a hinderance in the development of their personality.

I know of a boy who was studying in the middle class in a public school of repute. Though a topper in exam, he was an enigma for his teachers for his rough and tough behaviour. To meet this situation, the teachers often adopted the method of corporal punishment, but this turned out to be so degrading and humiliating for the boy that he developed a kind of hatred for his teachers and school.

In yet another case, the boy was fatherless His mother was a teacher in some government school He too was a brilliant boy, but the several schools at which he studied one after the other, sacked him for one reason or the other. Perhaps, these schools had their own justification for the treatment meted out to the boy, but such punishment does more harm than good to the erring children. The students so treated produce a type of revolt in their minds against the school authorities, which may go against the society in the long run. Those belonging to broken homes are further alienated from school as well as their own home.

In the West, the problem is dealt with pragmatically The mischief-doer would be asked to have a walk of about one mile to ponder over the deed done by him. On his return, he would be asked to report or explain his reactions. This method may not work in our country, yet it can offer a kind of shift from the type of punishment given here. Some schools in India prefer to give fatigue drill to the boy, which is quite a safer way to teach the guilty. However, we do need to have such uniform norms of punishment in schools that may be designed to reform, not alienate, the erring students from school, home and society.

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TEACHERS are often found complaining that children do not stick to their classes; they tend to truant away after recess; they are so incorrigible that no amount of advice would mend their ways. In that, a teacher would often say to his class, "I have taught you this unit of lesson thrice But you are all too dunce to understand it. Open the book for the next lesson—lesson No 19, Day and Night"

Some students begin yawning and some looking at the birds in the open sky. They, though physically present, are mentally absent from the class Some are fondly awaiting the next bell. In such a kind of situation it appears that the teacher finds faults with his pupils perhaps to cover up some of his own weaknesses This makes me tell my fellow teachers to see to whether while teaching, the students are not getting bored.

In this context the fact perhaps is that our teaching is getting rather so dull, dreary and uninteresting that the classes are losing all attraction about them Students do not feel like sticking to their classes but wish to while away their time in wandering here and there. However, if the teacher can make his teaching interesting, such a situation can be avoided. Here are a few tips in this regard ·

The teacher may himself become one among his pupils to sing, play, run and actively participate in every activity. For instance, in order to teach them counting, he may compose his own songs, poems and catchy phrases, like the one presented here in roman :

'Sabh se' pahle ek, ma ko matha tek ; uske 'age' do, khoob khe'lo kho ; do ke bad tin, baja baje bin ; Tin ke 'age' char, munne ko mat mar ; ,,

Obviously, children will easily learn counting through such songs and activities. Children possess an immense capacity for rote learning. This capacity would in this way be properly channelized and their interest in learning will be properly maintained

Try to make your period so interesting that children may eagerly await it. But this is possible only when the cooperation of the children is fully solicited in the teaching-learning situation They may be encouraged, from their very first day, to put questions to you about their doubts and curiosities.

Do not go to the class without prior preparation. If you go to the class with full preparation, children become readily receptive to learning. It means, you must carry with you whatever teaching aids are needed to make the topic motivating and interesting. Even simple material like duster, chalk, book, chart, sketch, map, model may serve the purpose. For instance, while teaching the topic on 'Hundis', I made them know about the blank 'Hundi' forms. Similarly, parliamentary practices were taught by actually organizing such groups in the class. Besides, used postcards, inland letters, and other things like kilograms, meters, etc., can be used as improvized aids to give them first-hand knowledge and in making teaching more effective

Always keep standing while teaching as this would keep you alert and would help you do justice to whatever topic you teach Do not show off your learning or scholarship before children as this would not help them in any way. Do not overload them with knowledge Assign them only that much home-work which they can easily do Home-work need always be purposeful and should be thoroughly checked.

Maximum use of chalk and duster be made. Simple illustrations and experiments would also make teaching easier. It really depends upon the teacher himself to make his teaching interesting and effective. To collect, prepare and utilize instructional aids is the teacher's basic potential. He can also seek students' cooperation in this task.

If we wish to earn respect of children, let's make our teaching simple and attractive. Exchange of knowledge can be made effective and lasting through the teacher's own efforts. Students do talk among themselves to appreciate such teachers whose teaching is interesting, effective and lasting Such appreciation is the real evaluation of the teacher. In students' appreciation of the teacher lies his real merit, respect and honour

CHUNI LAL SALUJA
Teacher, Secondary School
Shiv Puri (MP)

The Terrified Children

WE OFTEN hear and see that children are afraid to go to school. On a slightest pretext they stay away from school and feel quite happy about it. This may happen because parents try to frighten them into discipline by naming teachers. It is no surprise if children take teachers as bugbears. I have a few suggestions to make in this regard, based on my personal experience.

1. When a child enters school, the teacher is a stranger to him This unfamiliarity makes him feel afraid of him It is suggested that teachers, in the beginning, should talk to the children in a very loving manner so that they may feel at home.

2. The teacher should take care not to threaten his students for having forgotten to bring their textbooks or pencils, etc. Instead, he sould ask a student to share the same with his classmate or could lend him for a day, the material from school itself At the end of the day the teacher could remind him lovingly not to forget to bring next day what he had forgotten that day. This would help the child to be careful in future and also avoid the possibility of creating any kind of fear or phobia in him.

3. The problem of speech also results in several complications. In local schools the teachers speak a strange tongue hard to be followed by the children. A child may have several answers to the teacher's question but he hesitates to answer for fear that if he spoke in his own tongue the teacher might beat him Therefore a teacher would be well-advised to speak, as far as possible, the tongue the students have in that area, to encourage them to react without any fear, to the questions put to them in the classroom

4. The children are universally fond of playing. They are afraid to go to school because thev think if they are found playing, the teachers would take action against them. If the children are given time to play in school, there is no reason why they would hesitate to go to school.

5. The children want love and sympathy. Our schools woefully lack them. Our teachers normally believe in coaxing children to read This is one single reason why a quarter of our children drop out and another quarter fail at the examinations. Our teachers should stop beating them and teach them by loving persuation They should learn to sit with the children and help them out of their problems. This would create parental image in the eyes of such students.

If these small points are taken into consideration, not a single child would either hesitate to go to school or drop out before the due time In such a situation, they are bound to shine in all fields.

SWARN KUMARI
Primary Teacher
Government Girls' High School
Farukh Nagar (Haryana)

Water : A Classroom Unit

Ever since the evolution of life on the earth, water has remained its central force. The concept of water is even educationally important and can be useful in organizing teaching of different subjects.

School and Class	Lower Secondary School, Class 6 or 7.
Physical Environment	In the case of an urban area, students may be taken to a nearby canal or well.
Number of Students	15 to 90
Material Needed	A note-book and two or three colour pencils.
Teaching Situation	Students may be taken to a place near a well or a tank or a canal. The place may be got cleaned by the students themselves. If possible, they may be provided with the experience of camp life

Exploratory Questions	The teacher may ask the pupils questions like these :
Q.	How do you feel like at this place ?
Ans.	It is an interesting place. (Since the children love new places, they will find it interesting.)
Q.	What do you see here around you ?
Ans.	Farms, open fields, houses, river, canal, well, tube-well, etc (Children will naturally refer to things like these.)
Q.	What is there in the river, canal, well or tube-well ?
Ans.	Water (Water would be the required answer.)

The teacher may, in this way, introduce the day's lesson on 'water' and relate it to different subjects through further questions.

I. History

Q.	Children, why do people live near the river ?
Ans.	Because water is easily available there.
Evaluation	The teacher may tell at this point how man has been living near rivers since ancient times, and in the process may tell them the story of civilization. Today, piped water is available in every house in the cities. This was never so in olden days Then, the whole earth abounded in forests and man lived by eating fruits, birds and meat. After filling up his belly, he would go to the river to slake his thirst. In this way, the lesson on ancient man can be taught.

II. *Arithmetic*

Q.	Children, with what measure does the milk-vendor sell milk ?

Ans	(May be, the children speak out the word 'litre')
Q.	Do you know what makes one litre measure ?
	(May be, they are unable to tell it.) The wise teacher may tell that a pot ten centimeter long, ten centimeter wide and ten centimeter deep measures one litre water
Q.	How much water is contained in a tank two meter long, two meter wide and one meter deep? The teacher may give a hint here that the volume of a pot = $L \times B \times H$.
Evaluation	2x2x1 = 4 cubic meter = 4000 cubic decimeter. (1 cubic decimeter = 1 litre) $\therefore$ 4000 cubic decimeter = 4000 litre. The tank $\therefore$ contains 4000 litre water in it.
III. *Science*	
Q. 1.	In which different forms can water be seen ?
Q. 2.	What is done to cool water ?
Q. 3.	What comes out on heating water ?
Evaluation	Through questions like these, the teacher may explain the three states in which water can exist. Make the children understand that water can exist in three forms, namely—solid, liquid and gas. He may further explain that atoms in a solid remain closely well-knit with one another; in a liquid, they remain constantly in motion here and there; and in a gas, they are let loose and fly quite far away from one another. These three stages can be well-illustrated in this way too While the teacher is there in the class, all the students remain seated as a body and only their heads

and hands seem to move. This symbolizes the solid state. But when the teacher is not there, they tend to move about freely in the class like atoms in a liquid state And during recess, they get scattered like atoms of gas to distant corners of the school compound.

IV. *Geography*

Q. What is the source of a river ?

Here the teacher may describe the journey of a river from its source in the mountains to its merger in the sea and relate it with the local environment in its geographical dimensions like climate, vegetation, etc Knowledge of agriculture can also be imparted in this way.

V. *English*

Words like river, water, tree, well, hot, cold, etc., may be taught by using them in simple sentences

VI. *Art*

On-the-spot sketching and simple drawings may be done by the children which may be evaluated and improved by the teacher.

VII. *Home task*

Before leaving the place, questions like these may be assigned as home-work :

1. What have you learnt today about the ancient man ?
2. What are the different stages of water ?

A related arithmetic sum and a question on local climate and agriculture may be assigned.

Teaching in such a way may prove interesting to the children.

CHANDER KIRAN PANDEY

Headmaster, Lower Secondary School
Surya Nagar, Janpath, Nainital (U P.)

NEWS AND VIEWS

Creative Expression

WHETHER AT school or outside, all children love art They are always ready to take up pencil and paper and draw something or the other, giving free expression to what they feel and think. However, generally, this important aspect of the child's development has hardly been given serious attention to either by parents or teachers. Most of the parents even go to the extent of condemning this activity as a waste of time

Manmit Singh, an art teacher at Yadavindra Public School, Patiala, thinks otherwise. He strongly believes in the efficacy of Art as an effective medium for the child's creative development. He has founded an organization called the International

Child Art Enthusiasts Federation to encourage creativity among children by promoting art education and exchange of child art exhibitions with other countries, in association with the other international counterparts like the International Society for Aesthetic Education Through Art.

[illegible] Competence

PRINCIPALS can help improve the competence of teachers by spending more time in the classroom, providing better evaluations, and rewarding successful teachers, according to the American Association of School Administrators (AASA)

"A major component of teacher evaluation and improvement—classroom observation —gets short shrift in many schools", according to an AASA report. One consultant quoted in the report, Richard Manatt of Iowa State University, said the typical principal spends less than half an hour each year evaluating a teacher. The small amount of time "is like 'spitting in the wind' if you're trying to help teachers change their basic teaching techniques into something that might be more beneficial to student achievement", said Manatt, a statistics professor.

Principals, meanwhile, should get to know their teachers and assign them where their strengths can best be used, according to AASA. Last-hired teachers should not necessarily get the worst jobs, and all teachers should be provided with help and orientation rather than left on their own to sink or swim, the report said.

Delegating some responsibility to veteran staff members or department heads to help out new teachers is one answer for some principals who can't do as much personal supervision as they'd like, according to the report.

Requirements for a Curriculum

THE Education Department of Tasmania has published a discussion paper on the teacher's responsibility in and for the school curriculum.

Prepared by teachers, and expressing a teacher's point of view, it is written in simple and straightforward language. Teachers everywhere will find it an invaluable guide to their curriculum planning. *Requirements for a Curriculum* claims that any adequate curriculum must

☐ Spring from a concern for children.

☐ Help each child learn, and go on learning, as much as possible about himself, the world and people in it.

☐ Be useful.

☐ Highlight some purposes to which all teachers can subscribe.

Boffins [illegible] Soft Landing in the Playground

Last year in England, teachers on playground duly saw 150,000 children injured on the hard asphalt surfaces And school secretaries presumably got through a similar number of Elastoplasts.

Now a team of scientists has come up with an invention to make breaktime a less harrowing experience all around, says David Lister in *Times Educational Supplement*

Boffins at the B P.Research Centre have, after two years, developed Ensorb, which will be officially launched soon.

Retailing at just under £ 40 per square metre, its central ingredient is stredded down motor tyres and B P claims that the surface will absorb much as much as 25 per cent of the energy in a child's fall, be it from a swing, a piggyback or birthday bumps.

However, the Home office-funded charity fair play for children says that so far surfaces are a good start, but not nearly enough. Administrative Officer said that playgrounds are not only often unsafe but also boring. "How long have we made do with swings and slides", she said. "We would like more adventure playground, prettily painted and on grass, where kids could use their imagination."

She added that school playground equipment was often badly maintained Climbing frames were too high and one school which dismantled its frame left a six inch spike sticking out on the ground.

Vocational Schools

There exist some 724 enterprise vocational schools and enterprise schools in the German Democratic Republic. About 75 per cent of all apprentices are being trained in an enterprise vocational school. At present 235000 school-leavers learn 291 trades requiring apprenticeship

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Readers' Greater Participation Invited

We invite our readers — the primary teachers — to contribute to this journal profusely. We are interested in pictorial features and illustrated articles written by the practising primary teachers The articles / features, clearly typed out in double space on one side of the paper only, should be sent to the General Editor, *The Primary Teacher*, Journals Cell, NCERT, NIE Campus, Sri Aurobindo Marg, New Delhi 110016.

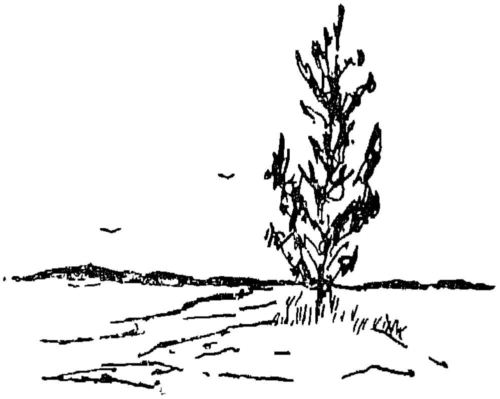
Editorial

VALUES, CULTURE AND EDUCATION

ALMOST UNIVERSALLY we notice a great change in values. One would be branded a traditionalist if one thought of stressing the importance of being good to others or speaking the truth in preference to a qualified truth. Ever since the birth and growth of nationalism, diplomacy in general and policies in particular have come to mean serving and safeguarding one's own interest alone even if it is at the cost of others. This kind of behaviour on the part of rulers gets permeated in the entire *body politique*, with the result that the levels of public morality get seriously downgraded. Unless certain steps were taken to prevent the ruled from learning the morality of the rulers, the standard of general life would become highly questionable, indeed. In a way the major problem that faces us is how to prevent the *praja* following the footsteps of the *raja*.

If the cultural standards of the people are quite high and the life very rich, the people would not like to follow the morality of their rulers. In fact they would learn to distinguish between the meaning of private and public pronouncements and know that whereas the *raja* can (and perhaps should) afford to have a dual personality, for the *praja* there is no such need. Was this not the reason why the *Panchatantra* was written ? If, on the one hand, it was meant to be education for an average royal child, it was, on the other, a kind of cultural enrichment programme for the others.

Education has, of necessity, to reflect the social and political mores. It has to provide training both *in* and *for* life. The tragedy, however, is that education cannot always prevent sordidness from creeping into education, or from occurring as it does occur The role of education is very limited. It could create conditions in which the seamy side of life does not become the universal norm. It can also stem a tide of corruption overtaking society as a whole. Conditions can be created in which the value system of the people is able to withstand the pressures of *'convenient'* morality. In a great land of ours Gandhiji wanted all to be truthful and to abhor violence. Somehow his message and his creed did not reach many receptive ears. Even if a part of his expectations were to be achieved through education, one could feel gratified. But are they ? How shall we attempt doing it ? These are some of the questions which need to be answered if we feel concerned about the safety and welfare of our society. We may perhaps like to examine the entire question of education in the context of Indian culture and values. Any attempt to do so is likely to yield treasures hitherto unknown.



Primary School Children : Development of their Cognitive Abilities

M. PUSHPA
Post-Doctoral Fellow in the Department of Non-Formal Adult Continuing Education Osmania University, Hyderabad

WITHIN THE past decade sufficient knowledge has accumulated to indicate that differentiated mental abilities can be identified in children who are too young to read and write. Still there is an ever-increasing number of studies pointing to the significance of social and cultural factors in intellectual development. Nasbet confirmed the hypothesis that the environment of large families—the limited contact between the parent and the child, and the consequent retardation of the child's verbal development—tends to depress intelligence-test scores. Bernstein analyzed the role of differential social class language patterns in the thought processes of children and concluded that the lower-class child is handicapped in conceptual thinking. Mc Candless discussed the effect of environment on the development and maintenance of intellectual functioning, and suggested that the frustrating experiences of the lower-class child interfered with his problem-solving ability. According to cognitive theory, the environment and innate structures have some effect on development, most of such change occurs because the child "contructs" new ways of thinking from his own activity in relation to the environment. The individual acquires a large number of complex abilities in the process of development. The conditions that determine the capabilities should be specifically identified to promote the acquisition of skills. Depending upon the growing child's interactions with the principal training agents in his environment, like parents, parent surrogates and teachers, the level of cognitive attainment might be detetermined.

A Case Study

In an attempt to identify the most contributory factors in the development of cognitive abilities of children, a study was undertaken, taking such variables as Biological· 1. age, 2 sex, 3 order of birth; School. 1 school, 2 grade; Social: 1. religion, 2. caste; Parental· 1 father's education, 2 father's occupation, 3. mother's education, 4 income, 5. family size On the cognitive domain problem-solving abilities were tested. The sample consisted of 265 primary school children in the age-rang of 5+ to 13+ from I, III and V grades. The schools selected were government, aided and private institutions from urban area and Zilla Parishad schools from semi-urban aud rural areas. A comparative sample of 25 children was selected from a residential school of tribal children. The sample of children covered lower middle and upper socio-economic backgrounds.

Since the sample chosen was primary school children, it was found to be more reliable to obtain the personal data of the child individually by a proper rapport. Each test was administered with proper intervals to avoid fatigue Factor analysis and multiple classification analysis were computed in order to understand the inter-relationships of a number of variables.

Results

Factor analysis revealed grade, school, father's education and income as highly prominent among all the independent variables like age, sex, order of birth, father's occupation, mother's education, size of the family, caste, religion, etc. Accordingly only significant findings were discussed. Age variations were included for assessing the developmental trend.

In the picture completion test, the higest adjusted mean of 7.59 with the highest net effect of 56 was obtained by the 10-year old children. In the Kohs Block test, the highest adjusted mean (12.46 with a net effect of 4.52) was scored by the 11-year old children. Likewise, in the object assembly test also the 11-year olds secured highest (6.09 with a net effect of .96) The results have shown a gradual progress of children with increase in age, i.e., at the earlier ages of 6 and 7 they were very poor in their cognitive abilities

Grade variations of children showed that they secured the highest in the Fifth grade in picture completion (8.26 with 1.22 net effect), Kohs Block (8.49 with .54 net effect) and object assembly (6.06 with .93 net effect). Lowest abilities were found in the first grade.

School-wise differences exhibited a different trend in the three tests. In the picture completion test, tribal children scored highest (10 42 with a net effect of 3.38), while the government and aided school children scored lowest. In the Kohs Block test, highest adjusted mean (11.31 with .33 net effect) was obtained by private school children, while the lowest scored were tribal school children. In the object assembly, semi-urban and private school children scored higher (6.40 with a net effect of 1.27, 6.24 with 1.11 net effect) when compared with others.

The differences in father's education in the picture completion test revealed that the highest adjusted mean score (8.10 with the highest net effect of 1.07) was obtained by the children of college-educated fathers and the lowest scored were the illiterate father's children. The trend was similar in the Kohs Block test (9.12 with a net effect of 1.18) and the object assembly (6.67 with 1.54 net effect) also, i.e., the children of illiterate fathers and those having primary education were lowest in their cognitive abilities

The variations due to income levels showed that the children belonging to the highest category (Rs. 2001-4000) were the highest scorers (10.04 with 3.00 net effect) in the picture completion test, while the lowest were the children belonging to Rs. 201-400 group. Likewise, in the Kohs Block and object assembly tests also the highest scorers were those belonging to Rs. 2001 to 4000 income group (19.08 with a net effect of 11.13 and 12.25 with a net effect of 7.12).

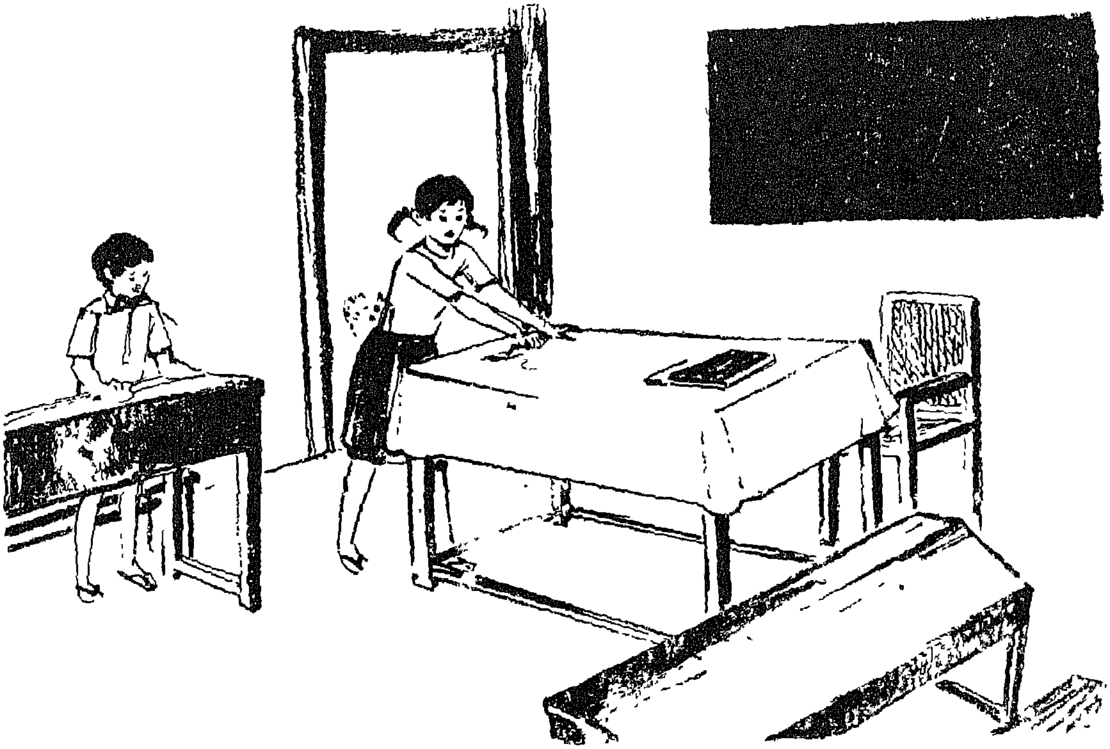
In the picture completion test which requires a child to point out the missing part, older children performed better than youngsters Several studies have shown that identification of pictures with incomplete figures is particularly difficult for younger children. In the Kohs Block test and object assembly also the children perform better with an increase in age, i.e., the ability of orientation is low in earlier ages. Grade differences have indicated a steady progress with an increase in grade. Selinka studied integration of parts in the perception of whole with the Kohs Block test and found a considerable improvement from the kindergarten level. The importance of school atmosphere has revealed that in the picture completion test the tribal children were superior to others. In the Kohs Block and object assembly tests, private school children performed better which indicates that in those tests which require more narrowing and thinking abilities they scored higher.

The place of school in the development of cognitive abilities has its own significance. School gives an opportunity to use and develop abilities for which potentialities have already matured but which have been given little chance for development at home. Classroom interaction directly counters part of that socialization and latent abilities develop rapidly. Also, as the study revealed, more than the father's occupation, his education and income were more important, i e., family environment should be congenial for the child's higher cognitive attainment. Deficiencies in the environment either due to physical factors or induced through socio-economic disadvantages have their impact on the development of cognitive skills. Social deprivation has its adverse effects on the cognitive development. Bronfenbrenner also maintains that deficiencies in home, physical environment, social set-up and institutional setting are likely to have a definite impact on the cognitive development.

From the above findings the following conclusions are drawn :

1. Cognitive abilities increase with increase in age.
2. Children's advancement on the cognitive abilities was positively associated with their advancement from one grade to the other.
3. Government and aided school children were poorer in their cognitive abilities when compared with private and tribal children. The children in rural and semi-urban areas were possessing lower abilities than all the others
4. Children whose fathers were illiterate or with primary education were exhibiting lesser cognitive abilities than the college-educated fathers' children.
5. High-income group children were superior in their abilities than low-income group children.

Hence it may be inferred that familial, economic and educational backgrounds are the most contributing factors in development of the child's cognitive abilities. This calls for good educational atmosphere and parental encouragement for the child. No amount of incentives will tempt the child to develop his abilities unless some of the environmental factors are taken care of.



Health Education Programme for Primary Schools

HARISH CHANDRA
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HEALTH IS a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Learning and intellectual achievements amongst the children are proportionate to their status of health and nutrition. Any amount of investment in education is not going to cut much ground unless and until we make sincere and well-planned efforts to make our children healthy and fit from the very start. It is difficult for a student to learn if he is tired, sleepy, hungry, or if he is in pain The absence of a child from the school on account of illness results not only in the loss of school days but also in that the ailing child, who attends the school with little attention to and interest in educational programmes, poses a problem for the school teacher in finding time to repeat what had been missed by him Deficiencies in vision or hearing, pain in the ear, or an aching tooth or even general debility can result in in-attention, making learning difficult. Health is thus a basic consideration of education.

As health is important for learning and education, so is education important for protection, preservation and promotion of health. It is, however, unfortunate that only superficial attention is being paid to the health education programme in our schools, particularly primary schools, although we all agree to its need and importance. The school health education programme aims at :

(i) Creating awareness in the child about the concept of health and factors influencing health.
(ii) Helping the child in developing awareness about the common health problems and in seeking help from the teacher and parents.
(iii) Developing in the children healthy habits relating to personal and environmental cleanliness, exercise, rest, sleep, posture, and food.
(iv) Helping the child to make wise decisions in respect of applying principles and practices of consumer health, with special reference to his physical well-being (better food and nutrition habits).
(v) Helping the child to develop an understanding of safety measures and to develop the skills of promoting first-aid
(vi) Making the child realise the importance of immunization against communicable diseases as an important measure for positive health.

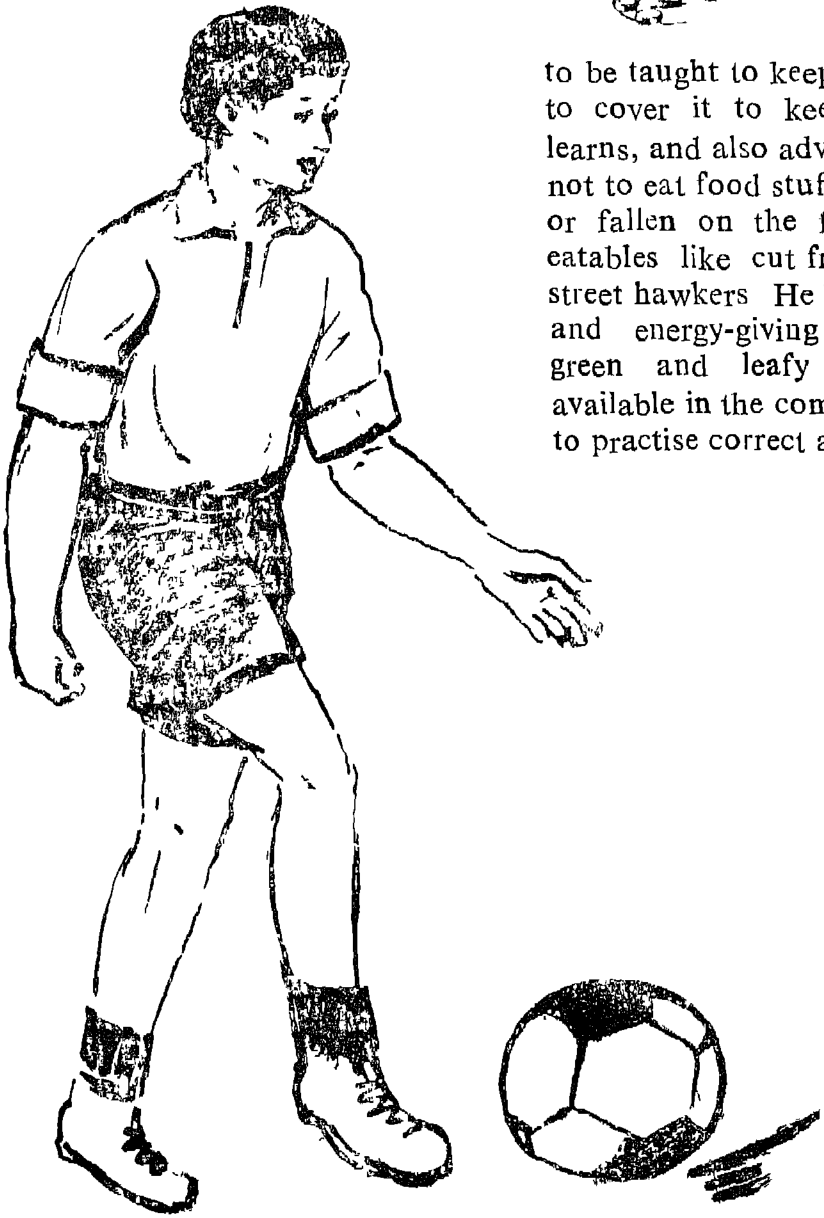
The school health programme in a way includes everything organized or carried out by the school, that

promotes the health of the students. It is not merely the knowledge of health education that is important but also that the child should learn to practise health-promoting activities in daily life, in the home, at the school and in the community around Children should have clear understanding of the rules of health and follow them effectively. They should develop proper habits, skills, attitudes and values with regard to health and hygiene. Unless we create suitable conditions in our schools, it may not be possible for the child to learn and practise the rules of health and hygiene Learning activities under the school health education programme, which is a part of the overall physical education programme, could be based on the following items.

(*a*) *Personal Hygiene.* The child should learn and practise the principles of health and hygiene, so that he is not only fit and healthy to do the day's work but also develops the required poise and confidence in him. We must see that the child appreciates clean looks; cleans his teeth in the morning as well as at night; keeps his nails trimmed and clean; combs his hair; washes his hands before and after taking meals; takes bath daily; puts on clean clothes; keeps a handkerchief and makes use of it as and when needed; does not spit in all places, but in a specific place or in the spittoon provided for the purpose; puts pieces of waste paper and other trash in the dustbins; does not walk bare feet, but wears shoes to protect his feet in the best way, takes care of himself in cold, rainy or hot weather in the best possible way Group activities pertaining to personal cleanliness may be taken at least once a week.

(*b*) *Healthy Environment.* A good and healthy environment in itself is an effective teaching aid Clean and airy classrooms and other good sanitary conditions do help build up in the students some essential health attitudes. Thus all efforts should be made to keep the classrooms, playgrounds and school surroundings clean.

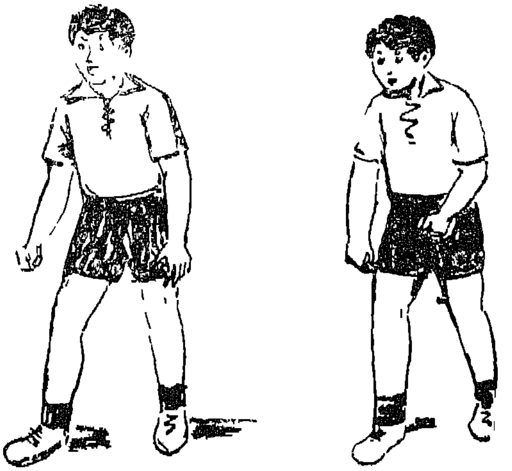
(*c*) *School Meals.* This activity is usually thought of as having a dual purpose One is to provide training in school meals service and the other is to help students learn about the importance of food to their own health It is intended to help them acquire good diet habits. Sometimes, the purpose may also be to provide food for students who are mal-nourished. A well-fed child is better able to get benefit from his studies. The child is to be taught to keep food clean and to cover it to keep flies away. He learns, and also advises other children, not to eat food stuffs that are exposed or fallen on the floor; not to buy eatables like cut fruits, etc , from the street hawkers He learns to eat good and energy-giving foods like milk, green and leafy vegetables, etc., available in the community. He learns to practise correct and hygienic eating



habits, as regular meal hours, proper chewing of food, cheerful disposition, limited eating between meals, no overeating. He takes part in growing kitchen garden in school and at home

(*d*) *Control of Communicable Diseases*. Health cannot be built up and maintained only with the help of medicines All preventive steps have to be taken, so that the child does not fall sick and miss his school. Generally, children fall victims to communicable diseases caused mainly by unhygienic personal habits and carelessness on the part of the parents as well as the teacher. We have to see that the child develops such healthful habits and pratices, that all chances of his falling sick are minimized as far as possible. It is to be ensured that :

(i) The child practises safety rules in the home, on the road and on the playground.



(ii) He reports the accidents/injuries to the teachers/adults without any delay and takes further action as per their advice.

(iii) He avoids contact with any of the other disease-careers.

(iv) He protects himself against mosquito bites

(v) He praticipates in the immunization programme against communicable diseases in general and with special reference to small-pox, tetanus, cholera and typhoid

(vi) He takes medicines in case of illness and always under the guidance of adults

(*e*) *Exercise, Rest and Sleep* A proper balance has to be maintained between work, play, and rest This is often ignored by the children, with the result that it has an adverse effect on their health. A proper understanding has to be developed in the child so that :

(i) He takes part in games intended for his age-group.

(ii) He takes rest after playing, and goes to bed each night at regular timings

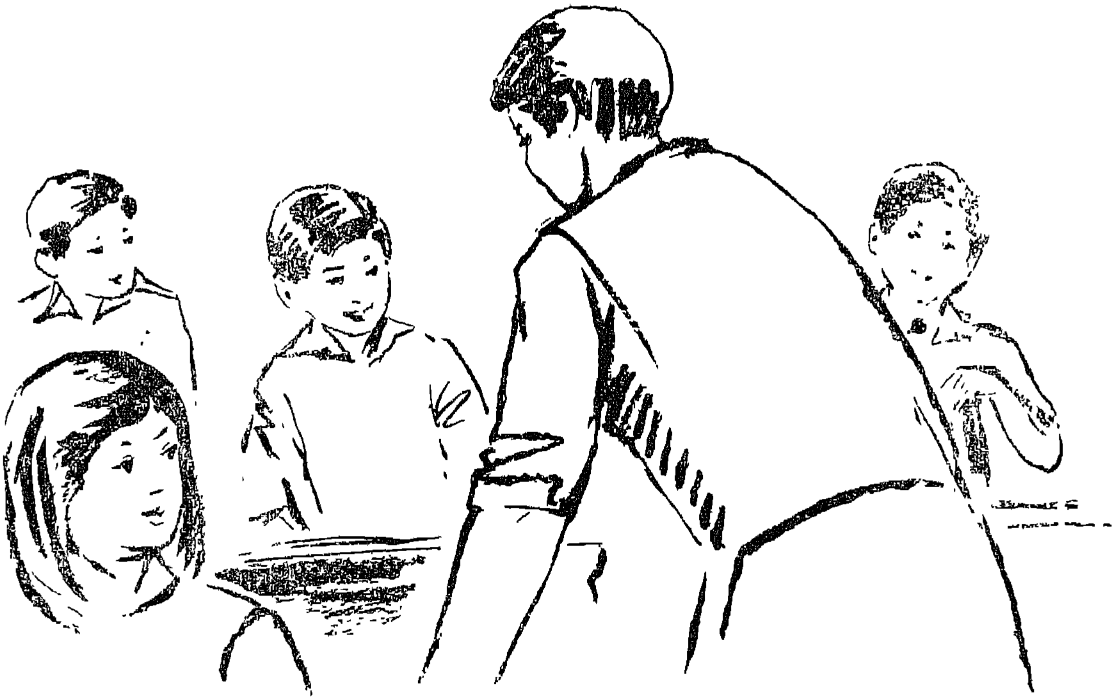
(iii) He adopts correct postures while sitting, standing, walking reading and carrying loads.

(iv) He selects safe places to play with a view to avoiding accidents

(v) He takes care to sleep in a well-ventilated room and wears loose garments while sleeping He does not cover his face while sleeping.

(vi) He uses leisure time in worthwhile activities like games, sports, music, hobbies, etc

(f) Creating General Awareness. It should be seen that general awareness about the need and importance of health education should grow in the teacher community. No doubt, the physical environment in the school is important from the point of view of the childern's health, but the emotional environment, that prevails in the school, is also equally important. It has been scientifically established that the major causes of diseases, both mental and physical, lie deep in the emotions of an individual As such a better emotional environment is conducive to the mental and physical well-being of the children. A strategy has therefore to be evolved for providing health education to the younger generation in the school. For effective implementation of the programmes of health, hygiene and welfare, it is necessary to make a coordinated effort by involving children, teachers, health workers and community members It may not be possible for the child to learn and practise the rules of health and hygiene, unless congenial conditions are created not only in the school, but also in the community around. And in this process, the teachers particularly at the primary stage have a special responsibility.



Improving Pupil Responses in the Classroom

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QUESTIONS ARE used in the classroom for a variety of purposes, right from introducting a lesson through the developmental stage to the closure of the lesson Questions can be broadly divided into two categories, apart from the functions of classroom questions at different stages of education. These categories can be considered from the point of view of the level of thinking a question generates in pupils The first category of questions is considered to be *factual questions.* In these questions, the pupils are required to recall or recognize information called for in the question from his memory. The other category envisages questions which require the pupil to process information available in his memory to arrive at the required response. This can be labelled as the *information processing* category. Even information processing can take place at different levels like interpretation, application, analysis, synthesis and evaluation.

Suffice here to say that the information processing questions call for pupil responses which have scope for improvement.

Two kinds of situations involving the teacher's questions and the pupil responses are likely to arise. Firstly, the pupil is not in a position to provide a response to an information processing question Secondly, it can be that the pupil succeeds in providing a response to the teacher's question, but it has scope for improvement. Here an attempt is being made to identify the competencies required by the teacher in helping pupils to improve their responses. The teacher's behaviour comprising these competencies has also been specified so that teachers can accomplish this objective with ease and fluency in the classroom transactions.

Pupil Reponse Possibilities

Before coming to the competencies and the teacher's behaviour comprising these competencies, it will be worthwhile to consider the pupil response possibilities in the context of classroom questions calling for information processing. The pupil response possibilities, as a matter of fact, forms the basis of the teacher competencies required for improving pupil responses. In response to an information processing question in the classroom, the pupils may not be in a position to respond to the question. Uneasy silence prevails. The situation is considered as *no response* situation The uneasy period of silence is broken by a pupil response, but the response is a wrong response. This is termed as *wrong response* situation There can be yet another possibility. The response received is either incomplete or partially correct. *Incomplete response* falls short of the required response. In *partially correct response situation*, a part of the respose is correct while another part of it is incorrect The response, sometimes, is correct but the *language is inappropriate* and the *sequence improper* The last possibility is that the response is *correct* which matches the response acceptable to the teacher. Obviously, *the first two situations*, rather all response possibilities except the last one, require intervention of the teacher for improvement. Some pedagogists feel that even in the last one, too, the teacher can take the pupil a step forward by way of enriching his experience repertoire.

Teacher Competencies

In order to tackle the pupil response situations effectively, the teacher requires some specific competencies These competencies along with the teacher's behaviour are spelt out as below.

Prompting

What happens when an actor in a play forgets his role at the stage ? Somebody from behind gives a prompt and the actor gains his feet. He continues as if nothing has happened. The same thing can be done with the pupils who have the information, but fail to provide a response to an information processing question. He is provided a prompt, a cue, a hint. The prompt is such here that it does not provide the response itself, but it should be in a position to rake up the pupil's relevant experience connected with the desired response Prompting is quite useful in 'no response' and 'wrong response' situations For example :

Teacher · How will our life be affected, if the sun disappears from the solar system ?

Pupil : ...(No Response)

Teacher : Has it something to do with day and night ? (Prompt)

Pupil : Yes, there will be no day and night.

Seeking Further Information

In the case of an incomplete response situation, the teacher can call for further information through supplementary questions. In the case of a partially correct response situation, the correct part is accepted and the remaining part can be treated as in the case of the incomplete response situation

Re-focussing

In the event of receiving a correct response, the teacher can go a step further Here the teacher can ask a question requiring the pupil to relate the correct response to his similar earlier experience. This helps in assimilating the response in his cognitive map Re-focussing also includes calling the pupil to work out implications of the response for a new situation.

For example :

Teacher : What is salt used for in kitchen, besides making the food tasty ?

Pupil : For preserving fish.

Teacher : Can you recall some other situation where salt is used for preservation. (Re-focussing)

Pupil : Pickles

Increasing Critical Awareness

The correct response from the pupils can also be followed by requiring them to reason out the response. For example :

Teacher : What are the uses of forests?

Pupil : Forests provide us with timber.

Teacher : Yes, any other use of forests.

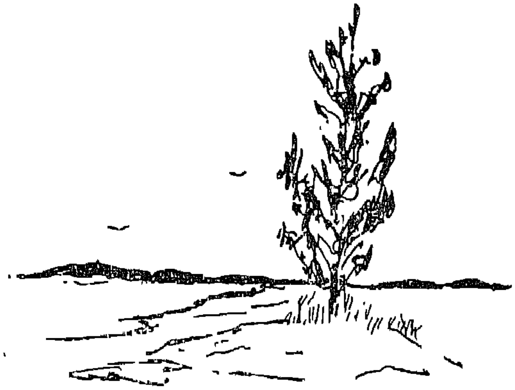
Pupil : Forests help an area in receiving rains.

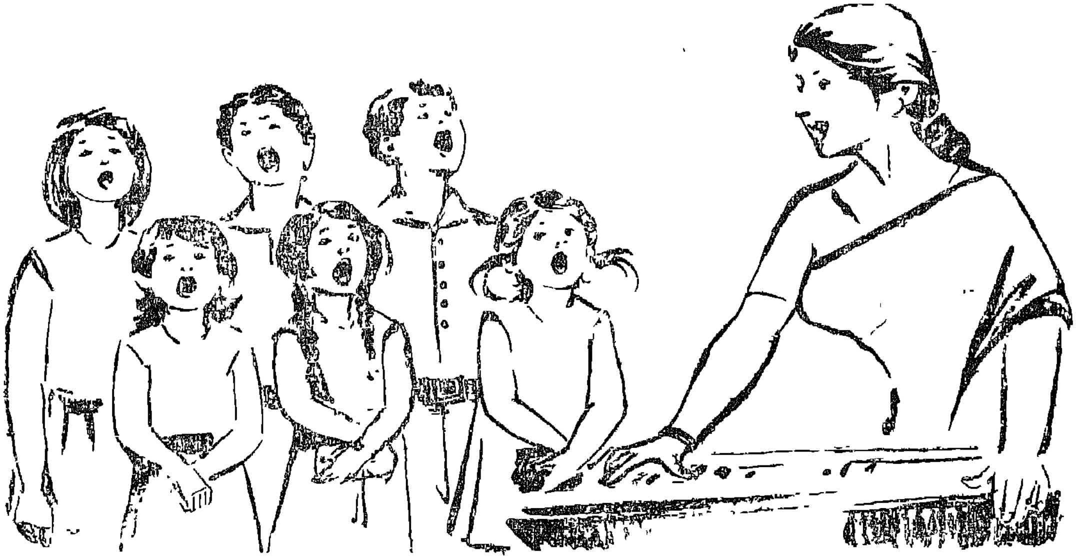
Teacher : How do forests help an area in receiving rains? (Increasing Critical Awareness)

Structuring Pupil Responses

If essential ideas of the response expected to a question are received from the pupil and the language and sequence of the ideas are inappropriate, the teacher structures pupil responses. This usually happens in the case of lengthy responses. Here the teacher re-phrases pupil responses.

In order to elicit the required pupil response to an information processing question and to improve, the teacher prompts, seeks further information, re-focusses, increases critical awareness or structures pupil responses The use of specific competencies depends upon the type of response received from the pupils. The teacher can practise these competencies to deal with any of these situations arising in the course of classroom transaction.





The Child and the Teacher

BHAGAT RAM GOYAL

WHEN A CHILD initially enters school, he is a little scared of the new environment. Firstly, he is totally unaware of the school climate and secondly, he does not feel as free there as he does at home However, if only some attention were paid, school could also give him the feel of home.

Love is the psychological food of a child. Those teachers who show similar affection to their students as they do to their own children, the students also reciprocate It has often been observed that those teachers who show affection to their taughts and talk to them lovingly and reward their answers receive great love from them. A teacher is like a parent in school. Only a teacher has to realize this. Good teachers always come forward to help the children When they are in distress—be it a minor ailment, a bodily injury or sharing a family misfortune. This behaviour evolves a permanent sense of service toward such teachers.

It is a psychological fact that a child wants to win the appreciation of the teacher. He derives satisfaction when he is successful in his effort. Initially the child avoids the company of the teacher as the later appears to him a stranger. An experienced teacher would leave his chair and come close to the child so that the child overcomes the feeling of being unknown. It is a very satisfying experience both to the teacher and his students.

Language is one medium through which a child comes to aquaint himself with his new environment. Speaking the idiom or dialect of the child is a big help. A teacher ought to try to familiarize himself with the families of the children he teaches. That is how the teacher can not only win the student's confidence but also the goodwill of the family.

A child is by nature a discoverer. He wants to know about everything new he watches. He is totally captivated by the flowers, gardens, pictures and models he sees. A teacher could take the help of these things not only to satisfy the natural curiosity of the child but also to create a kind of environment in school which not only attracts the child to the school but also sustains his interest in school activities. The following steps may positively contribute to bringing the child and the school closer

The First Step

In good schools children are free to eat as they do at home

A few teachers take children on visiting rounds of the school. They show them round to make them feel happy.

Children play in their localities with stones, earth, etc. In good schools they are equally free to play as they choose.

Small children love to play in groups. In good schools they are allowed the freedom to shout, laugh run and play. This freedom has a positive influence on them.

The Second Step

A few teachers feel so at home with children that children in turn take them to be their big brothers or close friends. This relationship enables them to obey their teachers.

Children love to break, re-create things or disfigure walls. In schools they could be permitted to do these things within a new frame, i e., they may break chalk-sticks, write or draw on blackboards, etc

Children also love to walk in different styles, mostly copying camels or frogs,etc. These are innocuous things and could be permitted. In good schools students are regaled to music They are asked to sing or tell stories. This gives them the feeling of being at home.

The Third Step

As we all know children bring their lunch packets from their homes. Nursery class students cannot live without eating before the appointed hour. It is always advisable that this kind of accommodation be made in consultation with their parents

Teachers have varied responsibilities. They cannot escort children to and from school to their places of residence. Good teachers assign this work to senior students.

We could also utilize the liking of the children for playing with earth and papers. This could be done with considerable benefit both to the students and the school.

Sports and other similar activities could also be profitably employed for the physical development of the students. This is the fact which stands supported by all educationists. Games make children social and develop them physically. They bring out leadership qualities in them.

Children relish music and love story telling. In schools they could be regaled to music and told stories This would help them keep away from playing in the streets.

The Fourth Step

Children could be permitted to roam around their school area and acquaint themselves with its environs. Conducted and well-modulated programmes of this nature could be of great help.

A few humane and considerate teachers cannot stand the sight of a crying child, and they try to help such children in their own way. When these children go back home and relate the humane behaviour of the teachers, the latter earn a lot of goodwill for them and also for the school.

Children could easily be permitted to build, destroy play material. For instance, they could do a whole lot of activities by playing with clay or used paper. They would shape and reshape things according to their fancy.

Children also love colourful material. Good schools are well stocked with clourful charts, models, play material. In such institutions children are organized to play and learn.

The Fifth Step

It has been observed that small kids love to help their elders in keeping the school, classes and furniture clean and tidy. They both enjoy and take pride in doing so. Children could be encouraged to store curios in small rooms or in a corner of the classroom. They would take pride in tending school plants and watering trees. Teachers could teach through these activities.

In good schools teachers play along with students and thereby try to encourage them. Children could also be taken out on short educational tours and asked to participate in group songs.

The Sixth Step

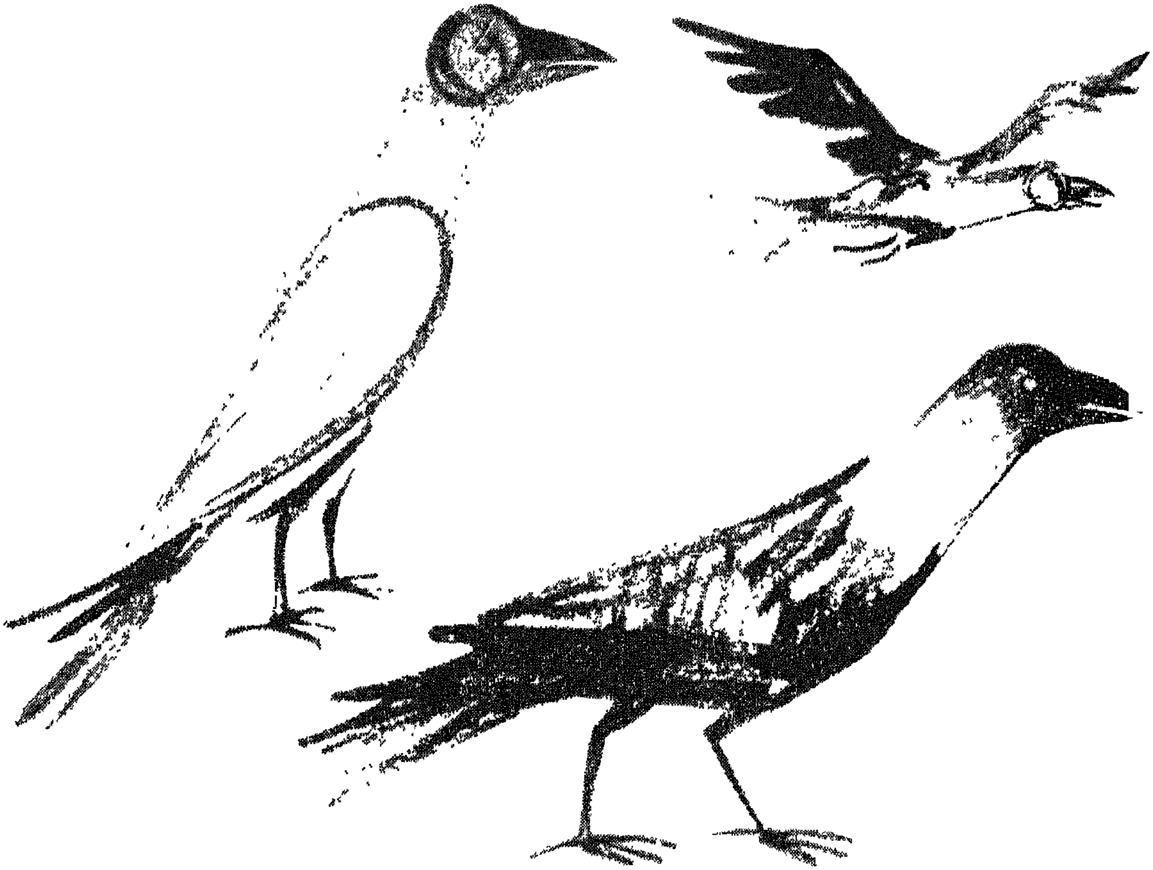
In good schools children are trained to keep themselves clean. They are shown how to eat and wash after eating. They are also told where to eat and not to spoil clothes.

Speaking with children is an art. However, all children can learn to be polite and soft. This enables children to feel secure.

Play and creative activities be made part of the school curriculum. Wherever all these things are done such schools acquire good name for themselves.

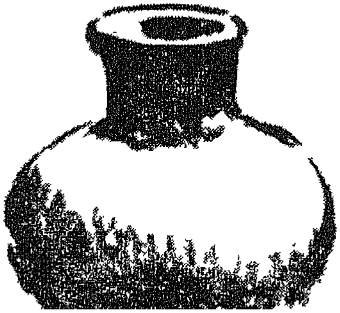
HOW TO DRAW CROW

Note for the Teachers : Please relate this tale in the class and help the children draw crow as well as the sun and the pitcher Please insist on drawing separate lines of the anatomy of the crow and the lines of the pitcher. Please tell the children how easy it is to draw them all



The story of a thirsty crow is well known. Somehow it does not say why the crow felt so thirsty or why did he go to a pitcher after all. We do have a proper tale to tell.

Once a crow looked around himself and found that he was both powerful and big. He wanted to



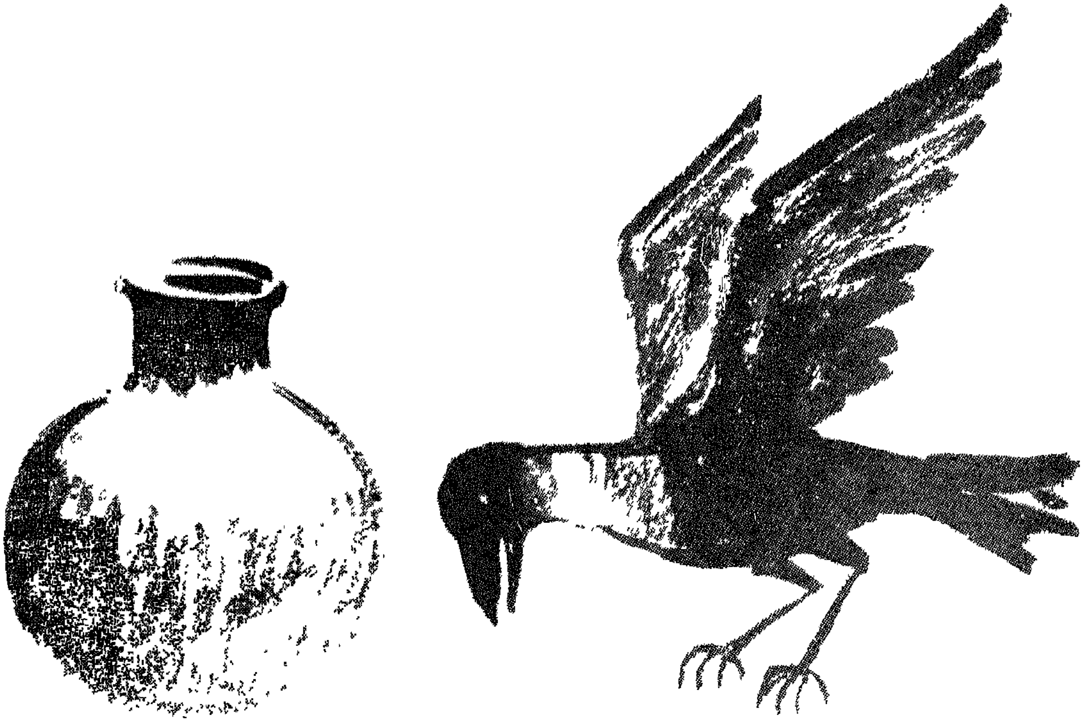
test his strength. He therefore asked the lady-crow about the manner of testing his prowess.

“If you really want to prove that you are very strong, why don't you fly over a distance? The lady-crow proposed.

“It is a good idea” The crow replied, very pleased.

“I shall fly up to the SUN and see how big it is”

Without waiting for confirmation, the crow started flying upwards. He had hardly flown for some time that he felt very thirsty. He could not continue with his flight any more and soon he was looking for water The only water



the crow could find was in a pitcher. He had to work hard to quench his thirst

The moral of the story is that one should know one's strength before venturning on a fruitless project.

Development Schedule for First Standard Primary Students

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THERE IS fairly universal agreement about the sequence in which various skills appear in the developing child A review of the developmental checklists and sequential inventories currently available shows that identical skills appear in a child's repertoire at a given age. It is not uncommon to find extremely uneven development in handicapped children as well as those with learning disabilities. Therefore, identifying areas of potential strength, as well as those in which performance is extremely deficient has tremendous implications for all programming efforts. For those areas in which the child is found to be extremely deficient, knowledge of normal development becomes even more critical, for, without such knowledge it becomes most difficult to identify the behaviour which becomes the focus for educational objectives.

Laterality : By the age of around six years, seventy per cent of the child population becomes homolateral, i.e , they establish dominant use of one side of the body and this dominance is consistent for hand, foot, ear and eye The remaining thirty per cent will be cross-lateral throughout their lives, the most important feature being a dominant left eye with a dominant right hand or a dominant right eye alongside a dominant left hand. Most intelligent people cope adequately with cross-laterality and are usually unaware that they possess this feature of development. There is now evidence, however, that for the less able amongst us, particularly those who are slow to mature, cross-laterality is a handicap during the period of learning to read and write. These are the children who need larger pieces of paper than the average child and need extra practice in left-right orientation. They will usually exhibit reversal and inversion of letters They will be particularly predisposed to spelling difficulty at a later stage.

Motor Development : Most authorities on the teaching of reading now accept that poor readers also tend to be clumsy. The tests of physical development and motor ability are intended to assess clumsiness. The average five-year-old is able to stand on tip-toe for ten seconds. The average six-year-old can stand on one foot with the other raised behind from the knee for fifteen seconds. The average six-year-old can hop on one foot for five meters, and can throw a ball at a target which lies at a distance of three meters. The above average five year-old will hit on or near a target on three occasions. The average five-year-old will hit the wall The below average five-year-old will be "way out" in his attempt The most six-year-olds can walk heel to toe along a strip, line or rail for ten steps

Bead Stringing The six-year-old should thread at least eight beads in twenty-five seconds.

Visual Achievement Forms · If the child is unable to copy the number of forms appropriate for his age, he is unlikely to be able to read by the look-say method without further preparation He is also unlikely to be able to write with reasonable legibility. Children of seven years should be able to copy all forms. Children of six years should be able to copy five forms (not the diamond) Children of five years should be able to copy four forms Children of four years should be able to copy three forms. The forms are : cross, circle, square, rectangle, triangle, diamond.

Visual Memory : The child who cannot remember the relative positions of three toys is unlikely to build a basic sight vocabulary.

Draw A Person · The ability to draw a recognisable person has much to offer as a diagnostic tool to the observant and experienced teacher. The drawing at five or six years of age seems to come from within the child's experience rather than being a copy of a person. Even if there is a person standing directly ahead of the child, he shows no indication of observing, and drawing that figure. Achievement on this task is also related to laterality (experience of sidedness) and later with discrimination An average four-year-child can draw a person with head and one other part, an average five-year-old can draw a person with three parts, and an average six-year-old can draw a person with six parts.

Auditory Blending : The child who correctly synthesises four or five words is ready for a phonic approach within his learning to read.

Auditory Memory : The average three-year-old is able to repeat three digits in a sequence in one out of three trials The average seven-year-old is able to repeat five digits in a series.

Auditory Sequential Memory : The average five-year-old who is ready to begin reading will be able to carry out commands containing one or two items

Understanding and carrying out instructions are essential pre-reading skills Even young children predict (guess) the next word during their reading but they need an adequate memory and understanding before they are able to do this.

Implications for the Class Teacher · All the developmental norms mentioned above are actually important pre-requisite skills necessary for learning to read. Children introduced to reading without developing these skills often fail and may become frustrated, lacking confidence. Such effects are not easily rectified and can permanently discourage a child from reading. This is why care is essential to improve the deficit areas before introducing formal reading instructions.

Classroom Composition: What is the Objective?

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COMPOSITION EXERCISES are a perpetual headache for classroom teachers. The main reason probably is the fact that supervisors and inspecting officers invariably look for the number of exercises done, corrected, re-written, etc. Seldom is it verified whether the real purpose of composition is achieved or not. In the eyes of the supervising officer a teacher who has managed to quote larger numbers in the three categories is treated an efficient composition master or even language teacher. In such a situation therefore our teachers can be found busying themselves with a crash programme of adding to their score on the eve of inspection days and creating a hell for their children who are obliged to write even more than one composition a week, may be a letter, description, epitome, paraphrasing or the like. Teachers too compete with one another in emptying as many red-ink pens as possible. The ritual of giving impositions or re-writing exercises can also be seen in abundance.

Wrong Notion

Why is this undesirable and unhealthy climate allowed to flourish in our classrooms ? The blame has to be shared by the teachers as well as their supervisors. Firstly, because they nurture the wrong notion that everything will be alright if quantity is boosted even at the expense of quality. Secondly, and more importantly, because they ignore the real purpose of the exercise itself. The purpose is definitely not to adjudge the ability of the teacher in locating mistakes in written language nor is it allowing children to make mistakes and correct them later. The purpose is to inculcate and encourage the ability of expression—oral or written—in the child. The child must be able to tell, narrate or write about what it knows and that it wants to communicate to others.

We have found through experience that the traditional way of writing-correcting-rewriting compositions does not lead anyone anywhere near achieving the above-mentioned goal in any significant way. The method only creates hardships to the child as well as the teacher If there are 45 pupils in a class and the same teacher is to handle language lessons in more than one such class, how much efficiency, integrity and honesty can be expected of him in correcting the composition notes of all children ? Go to a good school and select a class at random and ask the teacher to pick out one of the composition note-books. The teacher will naturally locate that of the best child and see the exercises done in the beginning and after 4 or 5 months side by side. Will one be able to note any significant improvement in handwriting, style of expression, spellings or grammar ? The situation has generally been found disappointing

The Remedy

What can we do in this situation ? Let us look at our own procedure critically What elements in it help the child to improve its ability of expression ? We generally narrate a story or describe a phenomenon and make the children repeat them orally first and then in writing. At the outset the subject matter does not belong to the child. It is borrowed The child is simply asked to reproduce what is heard in the classroom. Verbatim reproduction leads to slips, omissions, mis-spellings, absence of punctuation marks, grammar mistakes, etc., which provide 'food' for the red pen. These things do not contribute to the development of the child's ability of expression Another undesirable contingency is that 'wrong' precedes the 'right' and according to one of the laws of learning that which precedes gets a firmer ground in the minds of the pupils Why do we allow or make the child make mistakes and then try to correct them with the omnipresent red marks ? Can't we try to make it say or write only the right things ? Is not *prevention* better than *cure* ?

An experiment conducted and found useful by some resourceful teachers may be considered in this context. The idea was to lay stress on the objective of acquisition of the ability for expression and, therefore, topics or themes for composition exercises were selected from among those which were familiar to the children, e.g., *'how potato is grown'* (could be tapioca, tobacco, apples, black pepper or the like), *'rules of the road'*, *'at a railway station'*, *'my first journey by rail'*, etc The programme for composition was divided into three stages, namely, introduction, preparation and actual composition

At the first stage the teacher announces - may be a week before the date fixed for the third stage—the theme or topic in the class and gives some broad outlines for the task. A certain new terminology or structure which is unavoidable could be introduced and drilled at this stage. Children are then divided into small groups of 8 or 10 —at random—and directed to prepare themselves for the task. They are given sufficient time and some guidelines for collection of additional information needed. They are also told the possible sources of needed data.

The second stage envisages proper understanding of the theme and task. The groups are asked to prepare a single write-up on the theme/subject to the limitation of pages or lines prescribed by the teacher. They are free to consult the teacher, elders at home, senior school mates or others and seek help. Use of school library is also encouraged. Because a single write-up is to be the outcome and that has to be presented in a plenary session of the class, children will feel the need for selecting a leader and a rapporteur. The teacher does not interfere in these organizational aspects at all. The groups are also free to meet as often as they feel necessary and have discussions pertaining to the matter, method of presentation, style, etc. Because the groups are formed at random, it is likely that there would be at least some intelligent ones also as its members. Left to themselves the children take things seriously and the efforts of the whole group will be mobilized to an optimum level because there will be a sort of team spirit to make the group's product as best as possible. Presentation of each of the write-ups by its leader or rapporteur is the final stage of preparation. Children belonging to other groups also get an opportunity to criticise the work, constructively of course, and suggest modifications. In the case of controversies, the teacher has to give his verdict So also in the case of mistakes universally occuring the teacher has to correct them.

After the presentation of all group compositions (may be 4 or 5) and detailed discussions thereon, the class is prepared for the composition proper. We reach the third and final stage then The whole class sits together and each child writes his own composition Each child is free to have his own style, sequence or word order as he chooses in the light of his experience as a group member as well as a member of the whole class. While the composition is actually written the teacher has to go round the class and provide help needed by individuals Children should be encouraged to seek the help of the teacher whenever they are in doubt, instead of leaving things to chance. Here, again, the catch-word is 'prevention'.

When composition exercises on the pattern described above were conducted in Classes III and IV by the author and in some higher classes by some of his colleagues it was found that there was little use of red-ink and the children really enjoyed the lessons. Occasions for torturing with reprimands and impositions were seldom. Though not strictly according to the procedure detailed above, teachers can try to modify their traditional techniques by adopting this innovative practice basing on its principles and philosophy.

Homework and its Correction

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All Educational efforts have their pre-determined goals which are sought to be achieved in the form of skills among students Towards this end educational materials are got ready. In order to learn about the goal-achievement by any educational institution we adopt evaluative techniques. Homework forms a part of educational activity and partly it is employed as an evaluative technique.

Homework and its correction is surely a part of teaching activity. Homework constitutes a network which children attempt after and before the scheduled school hour. It can also be completed in the school. Therefore the definition of homework depends on the place and time where and when it is being considered.

Homework could be restricted to exercises in a single subject or to a combination of several In terms of scope, it could include the entire living time including the family, the society, the state, or the nation.

Normally, homework could be viewed as part of the entire teaching-learning activity. Besides, one could take into account age, mental development, life style, etc., while viewing the nature of homework and its quantum.

We could talk about homework on the following points : (1) Aims, (2) Expectations, (3) Essentials of homework, and (4) Nature of homework

Aims

Generally, it is assumed that a child ought not to spend all his time in play. Instead, a part of it he may use for studies. This is a negative view. The positive aspects of homework are·

1. Assessment of the academic achievements of a child in the school.
2. Reinforcement : The idea is that homework would tend to reinforce what has already been taught in the classroom.
3. Development : It is possible to hold the view that homework may extend the time for achieving those goals of education that are already fixed. The mutual relationship of knowledge, skill and aptitude has been determined with the help of homework.

4 Use of knowledge : What a child has already been taught could be gainfully employed by him at home. Such situations cannot be easily contrived at school.

5. Expectations : As all these things like reinforcement, developments, utilization of acquired knowledge are part of the goal of homework, a child must attempt it himself. He may however seek guidance from his experienced friends, family members, etc. In these cases where homework is done not by the child but by some one else, no advantages accrue to the child.

6. Essentials of homework :

(a) Homework should be interesting.

(b) It should be within the age, aptitude, and capability of the child

(c) Homework should be in consonance with the life style and experiences of the child

(d) Homework should not only be within the ability of the child but in agreement with the family background and personal requirement.

(e) In classrooms the law of averages obtains good but at times homework should take into account the slow learners and exceptionally bright as well

Correction

The correction of homework depends on two factors - subject areas and the nature of homework. For example, in science and mathematics the answers are identical but in social science the reply may remain the same and the presentation of these answers is different. In language and literature, both in content and presentation, there would be difference because of the several options available to a child. Here the differences are both stylistic and contextual. Also, while the correct answer to a question would be one, there would be variations in the inaccurate answers. Here, again, in science and mathematics these distinctions are far less as against language and literature. In the latter, besides the purity of grammatical usage and aptness for the occasion, one must consider the etiquette as well. For instance, the use of you and thou are a case in point

Three types of mistakes are possible in language : (1) grammatical, (2) syntactical, (3) linguistic. What is meant here is that in language more mistakes are possible than in science and mathematics and the dimensions in all these three are also quite different Therefore it is necessary to see homework from this angle and make corrections accordingly.

The nature of homework would be determined by its aims and these in turn would determine corrections. If homework is based on the knowledge-acquisition aim, the same could be verbal or written For the development of a skill, practice-based homework is a must. If certain attitudes are to be developed, the assignment of homework should be such that it enables the child to be self-analytical of his behaviour

The teacher should be observant while making corrections. He should see the nature of mistakes, and the reasons thereof. A few precautions are necessary in this regard :

(1) The teacher should restrain himself from making corrections in the original answers

(2) The level of correction should coincide with the level of comprehension of the students

(3) The mistakes may be discussed in the class.

For all this the teacher should note down the nature and reasons of mistakes and classify them. He would then be able to discuss the same with the children and prepare a remedial programme. It is not possible to examine all answerbooks in detail. The teacher could examine a few in detail and correct the rest less rigorously. If this method of correction could be repeated twice a year, the correction work would then be considered to have been undertaken satisfactorily.

Primary Education in France

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French educational system has several characteristic features peculiar to its cultural, economic, political and social setting. It thrives on the judicious functional blending of democratic, humanistic, socialistic, cultural and progressive values. The highly centralised system of educational planning and administration co-exists with a high degree of decentralization The system places high weightage on education, promoting leisure, fine arts, culture, humanities, scientific and technical knowledge.

Out of a total population of 53 million, about 14 million, i. e., every fourth person in France, are students. In India this ratio comes to a little less than one-seventh of the total population, The enrolment in the age-group of 6-16 years is 100 per cent, as against less than 50 per cent in India. The percentage of dropouts for the age specific cohort is 4 8 as against 59.9 in India. The stress on vocational and technical education begins right from the secondary stage and one can enter working life any time after 16 years of age, having completed the secondary education. There is no detention at the elementary or primary stage. Education in government schools, secondary colleges/lycees is free Private schools co-exist with public schools and they account for nearly one-sixth of school population The state, however, has monopoly in awarding academic degrees, holding examinations which are open to all candidates of state and private schools Both the organization and the curricula of the various streams are defined by the State. There is the Comprehensive Education Act of 1975 which, *inter alia*, stipulates various provisions on education at different stages of schooling and the responsibilities of school community including the staff, parents and pupils.

Compulsory Education

Education is compulsory for the age-group of 6-16 years. There is a provision for penalties on parents in the case of non-attendance of puplis. There is, however, no built-in mechanism to ensure that everyone attends the school and to spot out the non-attending children. During my visit to French schools I specifically enquired from the principals, teachers and parents about the nature of penalty imposed and the mechanims of finding about the non-attending children There was no answer to my querries I had to contend with general remarks that such instances were just non-existent and it was the responsibility of *Perfactures of Schools* to look for non-attending children and take up their cases. One is, however, surprised to find some, though stray, instances of deprived children begging and displaying playcards in local trains *(metro)* in such an advanced society

Nursery or Pre-primary Education

Pre-primary education is optional for the children in the age-group of two to six years. A large number of nurseries are maintained by private bodies. The enrolment of children in the age-group four to six years is, however, 100 per cent. Over 99 per cent of teachers in nursery schools are women. The teacher-pupil ratio at the nursery stage is as high as 1:40.

Primary Education

The primary stage consists of five years of schooling covering the age-group of six to eleven years. According to the Education Act of 1975, primary education is designed to meet the following objectives :

(a) to give the child the basic tools of learning : oral and written expression, reading and arithmetic;

(b) to promote the development of intelligence and artistic sensitivity, manual, physical and sporting abilities;

(c) to provide an initiation into the plastic and musical arts; and

(d) in conjunction with the parents, to undertake the moral and civic education of the child (Article 3 of Education Act No 75-620 of 11 July 1975)

There are three kinds of schools, viz , schools exclusively for boys or girls and co-educational schools The primary stage is further divided into three sub-stages, viz ,

i) Preparatory of one year;

ii) Elementary of two years; and

iii) Middle or pre-secondary of two years.

At the elementary and middle stage, the students attend classes for about 27 hours per week The school hours are from 8.30 a.m. to 4.30 p.m. with two-hour lunch break from 11 30 a m to 1 30 p.m. Students thus spend practically whole of the day in the school. Subsidized lunch is normally served in schools. It is optional.

The course content and the time-table is divided into three main parts, viz.,

i) *basic subjects* which include the French language for ten hours and arithmetic for five hours per week;

ii) subjects which make children aware of their enviroment, moral and civic education, including art and music for six hours per week; and

iii) open-air activities, including physical training and team sports for six hours per week.

The teacher-pupil ratio at the primary stage is 1 24. Over two-thirds of the teachers are women. The enrolment ratio for this age-group is 109 per cent There is no examination at the end of the primary stage.

Some New Experiments in School Education

Some of the prominent experiments being tried in the field of pedagogy at the primary stage are as follows :

i) At the primary level, individualized teaching and creation of libraries/documentation centres are promoted. Experiments are carried out to determine optimum conditions for organization and operation of libraries.

ii) Audio-visual means are used to modify the content, method and structure of school education. Tests are conducted to determine the various levels of understanding

iii) In the sphere of language, several experiments renovating the teaching of French are being undertaken. Descriptive researches such as comparative study of the oral language and written language of children and the behaviour of the teacher following different pedagogic structures are undertaken

iv) In the pedagogy itself the focus is on promoting awakening activities In various subjects screens of objectives are developed.

v) In mathematics at the pre-primary and primary level, experiments are devoted to teach children the concept of time, movement and speed and to study the role of spectro-temporal structuration in the preparation of logical operation, etc , the role of means of expression in learning mathematics development and construction of supervisory examinations, psychological tests, etc.

vi) Ten per cent of the school time is provided as a free time which can be used by students for any excurtional activity, participation in competition, sports, etc , according to their aptitudes and initiatives.

Teacher Edcuation

Primary teachers are appointed by the Rector of the Academic of the school, secondary teachers by the Ministry of Education and post-secondary teachers by the Secretariat of State for the Universities.

For entry as a primary teacher, one has to pass the competitive examination of Ecole Normale after completing Baccalaureat. This is a two-year course followed by a contract for 10 years of service. After three years of teaching, the teachers are allowed to gain further qualification for teaching in colleges (secondary schools) These teachers are entitled to the same benefits and facilities as available to the civil servants The primary teachers are known as Instituters, whereas teachers in colleges (secondary schools) are known as Professeur. Teachers in lycees must have higher degrees, i.e , *Maitrise or Diploma d' etudes superieures* or Certificate *d' apptitude an professorat,* etc. They are known as *Professeur* in *lycee.* Professors in universities must possess *Doctorat d' etut.*

There is not much difference in the basic starting salary of teachers at various levels. The primary and secondary teachers have almost a similar scale. The primary teacher receives a salary of F 2800 (minimum) and F 5,000 (minimum per month plus other allownces e.g. house rent, etc This roughly equals Rs 5000 (minimum) and Rs. 8000 (maximum) per month. The difference between the minimum salary of a primary and university teacher is 140 per cent while this difference in respect of the maximum salary is 190 per cent.

Continuing Education and Training

The people already in employment have a right to absent themselves from work for the maximum period of one year on their own for further training approved and controlled by the State. Both the State and the employer contribute to the expenses of the training including the trainee's pay

Noise Pollutant : Need for Proper Education

SUMAN BALA MALIK
A. B SAXENA

NOISE IS an inseparable part of our life. When we talk, walk, sing, wash our clothes, we produce noise to some extent We cannot do any activity without producing noise at all. The child is also attracted by the ringing of the bell or the voice of his/her mother, though both of them produce noise. He/she is also scared of loud thud and starts crying. On many festivals we produce so much noise through loud speakers and crackers that it becomes tiresome for us and we feel tension. All sounds, whether it is the harsh sound of beating of the drum or a sweet melody, add to the noise level in the atmosphere.

We make our environment unfit for our living in many ways. It is common practice that left-overs or the waste materials collected in the cities are thrown in the nearby river, lake or sea. This makes the water unclean and unfit to the extent that fish also die many a times. At many places, the sewrage is connected to the adjoining river. There are many other ways in which the atmosphere is polluted. For example, the smoke coming out of the chimneys of factories contains carbon monoxide, carbon dioxide, sulphur-dioxide and many other harmful gases.

Harmful Effects

Naturally, the question arises: Is noise a serious kind of pollutant ? No, not in terms of a relatively small number of people annoyed by airport noise, but if we take an account of the harm the sonic boom might cause in terms of dream deprivation, and the effects of traffic noise in terms of a large number of people living in cities who do not have normal sleep because of the noise, the problem becomes one of greater seriousness. The unfortunate part is that even those working in the noisy jobs are uninformed of the ill-effects of noise

The major harmful effects of noise are that it can :

(i) interfere with communication;

(ii) damage hearing capability;

(iii) cause harmful effects to the body such as indigestion, blood pressure. It prevents us from what we want to hear and enjoy. It is easy to visualize that a conversation can be carried on in whispers in a still place, while one has to shout to make a sense in a noisy factory.

Exposure to loud noise for a fairly long time can produce permanent hearing loss. The inhabitants of large cities are generally subjected to a high level of noise which gradually deafens them, as compared to those living in quieter towns. For example, the din at the railway termini in Bombay often rises above 70 dB, the level considered comfortable for the human ear. A survey conducted in various parts of the city has shown that the noise level in many places is as high as 90 dB or even more. This is definitely above the comfortable level. The hooting of a train is a strain on the ears because the level of noise rises to 130 dB and is 90 dB at a distance of about five metres.

Noise levels above 80 dB are capable of producing a permanent hearing loss. The effect is faster for louder noises and it is somewhat dependent on the frequency. Sound levels of about 120 dB can effectively saturate our sense of hearing. Greater sound powers are, therefore, not perceived as being louder, though they may be more harmful. A sound of 155 dB can burn the skin while a sound of 180 dB can cause even death. Sound weapons developed by the super powers aim at producing more than 200 dB.

In the complicated system of a living organism, the effects of stress of disturbances follow intricate pathways that may be difficult to elucidate Contrary to common belief, loss of hearing is not the most serious consequence of excessive noise The first effects are anxiety and stress reactions or, in some extreme cases, fright. These adverse reactions are coupled with a change in content of the blood which, in turn, produces body changes such as the increased rate of heart beat, constriction of the blood vessels, digestive spasms and dilation of eyes.

The ringing up of a bell, television, radio, automobiles, the crying baby, a nagging spouse – all add to the noise in the atmosphere However, the noise has physiological and psychological effects on human beings. As the noise increases more and more, the effects are more pronouced For example, the refrigerator or the air-conditioner is moderate in its noise intensity, whereas heavy vehicles, freight trains, aeroplanes produce a large sound which is very annoying. It is also well known that the working efficiency goes down when the noise level goes up. Accelerating motor-cycle still produces a louder sound and may have deafening effects The jet plane taking off and a siren possibly have effects causing physical damage.

The Need

Looking at the harmful effects noise causes, it seems necessary to make people aware of noise pollution and its serious consequences. Government must take a serious view of the situation within the country and take appropriate steps at curbing the growing menace of noise pollution. There should also be a law against producing noise unrestrictedly. It is high time that some sort of legislation was introduced to check this health hazard Strict action should be taken against the owners of automobiles without the proper silencer and there should be a check against horns causing much discomfort to the ear. The workers working in noisy factories should be provided with necessary ear plugs to protect themselves against the harmful effects of noise. In case there is still a hearing loss, they should be compensated by the employer

The following steps may also be taken to avoid noise pollution: Industries, factories, aerodromes, etc., may be located far away from residential areas. Radio, loudspeaker, etc., should be played at low level as far as possible. The areas near hospitals and other important places may be declared 'silence zones' and playing of horns, etc , should be prohibited in such zones.

Report of the Review Committee (1977) mentions the socially useful productive work as purposive, meaningful, resulting in either goods or services which are useful to the community. The aim of this curricular area is to provide children with opportunities of participating in social and economic activities outside the classroom, enabling them to understand scientific principles and processes in different types of work in the natural, physical and social environment. As part of this work, there is, therefore, a need for educating the school children and of making them aware of noise pollution and its consequences. And it could perhaps be best done at the primary stage by including the subject in the primary school syllabus.

TEACHERS WRITE

The Caste and the School

NOT UNLIKE inflation, casteism is rampant in India. In educated areas it is less prevalent as against pockets of illiteracy. Untouchability is a psychological problem which children inherit from their families. It is possible to cure this disease by careful handling, and intelligent teachers can certainly do it.

In my view the following measures taken at the school level could help a great deal in mitigating the evil of casteism.

1 *Ban the use of caste names*

Normally children are expected to write their surnames along with their christian names. The use of surname can be very embarrassing at times. The use of caste names therefore could be banned by the government

2. *'Singhs' and 'Sharmas' a problem*

In our area 'Singh' as a surname denotes a certain caste even as the surname 'Sharma' does It would be socially disapproved if a person from another caste used 'Singh' as a surname. This practice could easily be eliminated by a judicious use of power and persuation.

3. *Keeping distinctions in the use of common facilities*

It has been observed that caste Hindu teachers do not permit children from other castes to touch earthen jars or use common drinking facilities. This is most undesirable. Every teacher should treat all children equally, irrespective of their caste affiliations As it is, these subtle distinctions damage social relations.

4. *Bad habits of teachers*

Teachers in the lower classes do not behave properly with non-caste Hindus. They address them by their caste names and discourage them from participating in learning activities. It has been observed that teachers would ask these children to pursue their family professions instead of studies. This is something reprehensible and should be dealt with strongly. It would be wrong to suggest that all teachers fall under this category, but those found guilty should be dealt with severely.

Casteism is an evil which the teachers have a special responsibility to stand against resolutely and to make all efforts not to pollute the impressionable minds of young children with caste distinctions

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The School Garden : An Experiment

Our modern system of education, being bookish, does not help our children to learn several necessary things about their future. Indeed, they find themselves quite incapable of facing future and look for 'white collar' jobs only. The frustration of those who fail to get these jobs is quite understandable, because their education has not been vocational.

Schools do offer 'Work-Experience' facilities, but mostly such experiences relate to office, paper and pen. Luckily, there are exceptions and these exceptions could be multiplied to make education work-oriented realistically.

Children at the primary school stage are inquisitive and enthusiastic to learn new things in a way that suits their interest and capacity. Therefore any work-oriented educational programme should be carefully planned and executed. Before any project is taken up, it is necessary to keep the following points in view :

1. The ability and interest of the children.
2. The project should be interesting and should also contain the basic principles of play
3. It should fulfil some requirements of daily life.
4 There should be ample space and adequate facilities for its operation.
5. It should usefully employ time and from the financial point of view it should be developmental in approach
6 It may help children become self-sufficient and independent
7 The project should be run on modern techniques of management
8. It should develop children physically and morally

Based on the above criteria, we selected a school garden project. The Government of Rajasthan allocated three acres of land, with a dug well and pucca boundary around.

The state government also provided a free supply of seeds, fertilizers, pesticides and other facilities alongside free advice from experts.

Aims of the project

The aims of the project were as under :

1. To relate education with work.
2. To acquaint the children with the daily requirements and to create skills
3. To teach about weather and seasons, besides crop patterns
4. To familiarize the children with modern science and technology.
5. Use of leisure time in gainful acitivity.
6. To create love for nature and interest in national development
7. To generate good habits in the future agricultural class.
8. To undertake agriculture on scientific lines, using modern means of agriculture.
9. To make the children realise the contribution of agriculturists to the nation's economic development.
10. To learn about the use of different pesticides in agriculture.

When we undertook work on the project, we divided 1980-84 session into several parts and steps. For 30 students of Class V we collected all the necessary equipment and material. A knowledgeable and enthusiastic teacher offered to take charge of the whole project and to guide its day-to-day operations.

Using tractors, destroying weeds, using fertilizers, the land was now ready for cultivation The students were divided into six groups and each was assigned a specific job. They sowed vegetable and other seeds according to seasonal variations

In the category of vegetables, tomatoes, peas, spinach, raddish, carrot and green *dhania* were grown. Fruit plants like mango, lime, orange and bananas were also planted Various kinds of flower plants were also raised After gram cultivation, sugar crop was raised

It was a pleasant surprise to see children vying with each other to excel at all stages. They received rewards for their work. Those who had produced more received more. The land that lay unutilized thus far is today the scene of all green around indicating in no uncertain terms that children are beautiful blooming flowers in the garden of our society that must be properly nurtured and trained to achieve the best not only for themselves but ultimately for the whole society.

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NEWS AND VIEWS

Cane Ban Pressure Grows

An increasing number of Australian parents and teachers seem to be joining the campaign against corporal punishment in schools.

The move according to *The Times Educational Supplement* (11.9.81) is headed by a group called Parents and Teachers Against Violence in Education (PTAVE). In the past two years the group has gathered a dossier of more than 100 cases of physical punishments, often containing allegations of unjustified brutality. The group updates the dossier almost weekly and keeps state and federal politicians informed of fresh examples

The problems facing PTAVE are aggravated by the Australian tradition of institutionalized violence, and the division between government and private schools, which accommodate some 20 per cent of the school population

Pupils in all schools until recently were subjected to a variety of physical punishments at the will of the individual school principals. The cane was the most common implement but some favoured a leather strap not unlike the tawse still used in Scottish schools.

Under the Australian Constitution each state is responsible for education within its own territory : when one adds the Northern Territory and the national capital, Canberra, which has its own system, there are eight Australian education systems.

In the area of corporal punishment, however, there is a good deal of uniformity among them.

Girls, whatever the state and whether in government or private schools, are less likely to be punished than boys are. It seems that corporal punishment for girls at private schools is virtually a thing of the past with the occasional exception of primary pupils in some Roman Catholic Parish Schools. It is rare for girls over the age of 12 to be punished in state schools and it is not permitted at all in some states

Boys however are still subject to corporal punishment in most schools and a boy at a private school is more likely to receive or witness such punishment than a state school pupil.

Masters generally use a cane in most cases though the brothers in some Roman Catholic schools favour the strap. It is usually administered to the wrongdoer's hands though small boys are occasionally beaten across the buttocks.

The readiness of parents to report such incidents to groups such as

PTVRE and to publicize their complaints of brutality now leads to frequent debates on the subject in Australian newspapers. And a significant trend in favour of abolition does seem to be emerging in Australian Society.

The opponents of corporal punishment say there is an underlying sado-masochistic establishment in the schools which tolerates the beating of children. A spokesman for PTAVE Mr Jordan Rirk, said some of the group's dossiers showed evidence of fairly savage beatings, with boy's hands bruised and even deformed by canes and straps.

A Level Project Helps Disabled Woman

LIFE has been made easier for a disabled woman who for years has been unable to sit down, or to get on or off a bed without help. A team of pupils at a north London school has developed the motorized bed that will lift her from a horizontal to a standing position and back again at the touch of a button.

According to a report published in the *Times Educational Supplement* (11 9.81), the bed was designed by one pupil at Tollington Park School, Finsbury, as an A level engineering studies project. Another designed and built the electronic control box; and other boys at the school guided by their design and technology teacher made components and built the bed.

More Illiterates

THE NUMBER of illiterates in the world has risen by 456,000 in the past ten years, according to the director general of Unesco, Mr Amadou Mahtar M'Bow. This respresents an increase of 30 per cent in the world total, he said recently in Paris.

However, the world illiteracy rate is droping. Ten years ago it was 32.4 per cent. Today it is 28 9 per cent, and by 1990 it is likely to be nearer 26 per cent.

Commendation for Literacy Series

The BBC literacy series *On The Move* was given an honourable mention by the judges of this year's International Reading Association literacy award Winner of the award was the Department of Adult Education in Bihar state (India) for good work under challenging conditions. These and other literacy awards were announced at the United States Educational, Scientific and Cultural Organization in Paris. It was the first time any British scheme had been entered for an international award, says the *Times Educational Supplement* (11.9.81.)

SCHOOL SCIENCE

A QUARTERLY JOURNAL OF SCIENCE EDUCATION

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राष्ट्रीय शैक्षिक अनुसंधान एवं प्रशिक्षण परिषद

द्वारा

शीघ्र प्रकाश्य

शिक्षा जगत के लिए नई भेंट

भारतीय आधुनिक शिक्षा

(एक त्रैमासिक पत्रिका)

विषय वस्तु :

शैक्षिक अनुसंधान एवं शिक्षा में नये प्रयोग
शिक्षा दर्शन
शिक्षा मनोविज्ञान
वर्तमान शिक्षा की समस्याएं
पाठ्यक्रम एवं प्राविधि सम्वन्धी नवीन विकास
अन्तर्राष्ट्रीय शिक्षा जगत
राष्ट्रीय शैक्षिक प्रगति
विभिन्न राज्यो मे शिक्षा स्थिति
शिक्षा-शास्त्रियो से भेट वार्ता
पुस्तक समीक्षा

सम्पर्क : प्रधान सम्पादक
जरनल्स सेल
राष्ट्रीय शैक्षिक अनुसन्धान और प्रशिक्षण परिषद्
श्री अरविन्द मार्ग, नई दिल्ली-110016

JOURNAL OF INDIAN EDUCATION

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